Before the
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In the matter of: Distribution of the 1998 and 1999 Cable Royalty Funds	Docket No. 2001-8 CARP CD 98-99

Room LM-414
Library of Congress
First and Independence Ave. S.E.
Washington, D.C. 20540

Friday,
May 9, 2003

The above-entitled matter came on for hearing, pursuant to notice, at 9:30 a.m.

BEFORE:

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THE HONORABLE JEFFREY S. GULIN   Arbitrator
THE HONORABLE MICHAEL D. YOUNG   Arbitrator

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I-N-D-E-X

P-R-O-C-E-E-D-I-N-G-S

(9:35 a.m.)

JUDGE VON KANN: Good morning. Just on a housekeeping matter, it has seemed to us that it's been getting a little warm in this room in the afternoon. And I've spoken to people at the Copyright Office to see if somebody could come and ratchet down the thermostat a little. I understand this is being referred to committee, and there's going to be a task force study on it.

(Laughter.)

We may get somebody to come in later today and do it. We'll see. Okay.

MR. STEWART: I have a different sort of housekeeping --

JUDGE VON KANN: Okay.

MR. STEWART: -- matter, which is to first hand you an exhibit that I've had marked NAB Demonstrative Number 7. This is the prior case --

JUDGE VON KANN: Right.

MR. STEWART: -- exhibit that we discussed with Mr. Alexander yesterday.

(Whereupon, the above-referred to document was marked as Exhibit NAB 98-99 Demonstrative No. 7 for identification.)

JUDGE VON KANN: Okay.

MR. STEWART: And secondly, I have as a demonstrative exhibit, which I've marked as NAB Demo 8, a copy of the numbers that were written on the white board yesterday with respect to Mr. DeFranco's testimony for cross examination of Mr. DeFranco.

(Whereupon, the above-referred to document was marked as Exhibit NAB 98-99 Demonstrative No. 8 for identification.)

JUDGE VON KANN: Okay. Thank you.

Any other administrative kind of matters before we get rolling?

MR. LOPEZ: If I may, Judge von Kann --

JUDGE VON KANN: Yes.

MR. LOPEZ: -- this morning we have served each of the other parties with the claimant's motion for corrected testimony. It came as a PBS motion the other day.

JUDGE VON KANN: Okay.

MR. LOPEZ: We have left filing copies with the office, but I wanted to drop copies off for the Panel.

JUDGE VON KANN: Okay. Fair enough.

Did everybody just get this a few minutes ago or something?

MR. LOPEZ: Yes.

JUDGE VON KANN: Do people want to have a little chance to look it over before they tell me whether they have any objection?

SEVERAL PARTICIPANTS: Yes.

JUDGE VON KANN: Well, why don't you read the first page during the first break and the second page during the second break. And then you can let me know after lunch if you object.

Okay. Anything else? All right. Mr. Stewart?

MR. STEWART: Commercial Television calls as its next witness Dr. Gregory Rosston.

JUDGE VON KANN: Okay. Good morning, Dr.

Rosston.

WHEREUPON,

GREGORY ROSSTON

was called as a witness by counsel for the National Association of Broadcasters and, having been first duly sworn, assumed the witness stand, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. STEWART:

Q Would you state your name, please?

A Gregory Rosston.

Q Were you in sunny California yesterday teaching class?

A Yes.

Q So you had a long flight, I take it.

A It wasn't too bad.

Q What's your current position, Dr. Rosston?

A I am the Deputy Director of the Stanford Institute for Economic Policy Research.

Q Sometimes referred to as SIEPR, S-I-E-P-R?

A Yes.

Q What is SIEPR?

A SIEPR is an institute at Stanford that brings together economists from across the university to study issues relating to economic policy. We do studies ranging from development in India to social security reform to telecommunications and regulation to macroeconomic policy.

Q And what particular kinds of research do SIEPR scholars do?

A We do sort of research on any issues relating to economic policy, and a variety of studies are from case studies, large data set econometric analyses, policy briefs, a wide variety of different studies.

Q And do those kinds of studies include regression analyses?

A Yes, they do.

Q How long have you been at SIEPR?

A I've been at SIEPR for five years or so.

Q And what are your responsibilities as Deputy Director?

A As Deputy Director, I'm sort of responsible for the day-to-day running of the whole organization, different research projects, making sure -- trying to get funding for the research projects, fund-raising with donors. We have a policy brief series that I run. We have a working paper series that produces scholarly papers that I also run, and then a lot of conferences and coordinating different scholars.

Q So you review a lot of econometric research in that capacity?

A Both in that capacity and then as my general capacity as someone who studies telecommunications issues as well.

Q And you also teach at Stanford?

A Yes, I do.

Q What courses do you teach?

A Currently, I'm teaching a course called Economics of the Internet. In the past I have -- I have taught that course before. I have also taught courses on antitrust and regulation, public policy analysis, economic policy analysis on telecommunications, and those are the courses that --

Q In your courses do you cover

communications industries and cable television?

A Very much so, yes.

Q What positions did you hold prior to your current one?

A I was a research scholar at SIEPR. I've been Deputy Director for about three years, or three and a half years now. Before that I was a research scholar at SIEPR for two years, and prior to that I was the Deputy Chief Economist at the Federal Communications Commission. And prior to that I worked for a consulting firm, or two different consulting firms.

Q What years were you at the FCC?

A I was at the FCC from 1994 to 1997.

Q And what was your position there?

A I was Deputy Chief Economist. I was also Acting Chief Economist in the Common Carrier Bureau and a Senior Economist in the Office of Plans and Policy.

Q What were your general responsibilities while you were there at the FCC?

A Doing whatever the chairman wanted.

(Laughter.)

And considering he's coming to guest lecture my class next week, I guess I did okay on that part.

I was responsible for looking at competition issues in lots of different areas of the Commission. I started out, the first thing I did was got to use a gavel like that to work on auctions. We designed and set up and ran the first spectrum auctions for PCS spectrum, and then I did a lot of work on wireless policy, on spectrum policy.

I also was involved in the -- to some extent, to a limited extent, in the cable rate regulations in early 1994, and then spent quite a bit of time working on the Telecommunications Act in 1996.

Q Was cable television involved in your 1996 Act work?

A Yes, there was some cable television work as well relating to what's called open video systems. This is the provisions of the Act that were setting up to try to make it easier for companies to compete with cable systems.

Q What is your educational background?

A I have a bachelor's degree in economics from the University of California at Berkeley, and a master's and Ph.D. degrees from Stanford University in economics.

Q You say in your testimony your specialties in economics are industrial organization and regulation, with an emphasis on telecommunications, is that right?

A Yes.

Q What is industrial organization?

A Industrial organization is the study of industry, how do firms compete, what are the strategies of firms, how do they interact, and sort of trying to look at, do you have a competitive industry? What sorts of market imperfections might there be? And how does the industry react? How do the firms react? How do consumers benefit or not from that?

Q And you study as well how regulation interacts with those structural issues?

A Yes. A lot of my work has been looking at the effects of regulation on performance in different industries, how -- in particular, a lot of my work has been looking at FCC regulations.

Q Now, are regression analysis techniques commonly used in industry analyses by economists?

A Yes, they are.

Q Have you used regression analyses previously?

A Yes, I have.

Q Now, I direct your attention to the document that's entitled "The Report of Gregory L. Rosston." Do you have it there?

A Yes, I do.

Q First of all, could you describe for us the reason for the submission of the corrected pages on February 14, 2003?

A Yes. I was -- my regression analysis is based on data on program categorizations, and I was informed that those program categorizations had changed to some extent. So since that was the data that I used, it changed the data that underlie the regression, so I went back and reran the regression with the corrected data.

Q And just flipping through your testimony so we're sure we have all the corrected pages, those include page 17?

A Yes.

Q And then, pages 19 through 24, 19, 20, 21, 22, 23, and 24, correct?

A Yes.

Q And finally, Appendices C, D, and E?

A Yes. Those are all corrected pages.

JUDGE VON KANN: And these are corrections that resulted from some corrections you got from Dr. Fratrik, I gather.

THE WITNESS: Yes, exactly.

JUDGE VON KANN: Okay.

THE WITNESS: The programs were categorized, and then I understand that they had double-counted programs for closed-captioning. So that those programs were then subtracted out, which affected the numbers of minutes in different categories.

JUDGE VON KANN: Okay.

BY MR. STEWART:

Q Do you have any further corrections, Dr. Rosston?

A Not at this time, no.

MR. STEWART: I tender Dr. Rosston as an expert in communications industries and applied regression analysis and make him available for voir dire at this time.

JUDGE VON KANN: Any voir dire anyone wishes? Okay. Apparently not.

BY MR. STEWART:

Q Dr. Rosston, what did the Commercial Television Claimants ask you to do with respect to this report or in this proceeding?

A I was asked to develop a framework for assessing the relative marketplace value of the different categories of programming that are shown on distant signals.

Q And what's your understanding of the standard, or what's the purpose for answering that question? What's the standard that's applied here?

A My understanding of the standard is to -- that these royalties need to be distributed according to a -- what the relative would be in a free marketplace, so --

Q Now, turning to the cable operator distant signal industry -- or to the cable operator industry itself, what are the economic principles that affect program choices or distant signal choices by cable operators?

A The way that cable operators work is they want to maximize profits, and that's the sort of running assumption that an economist would make. And so that cable operators pick their programming lineup in order to make it attractive to subscribers, and they want to maximize or sort of -- it's a combination of two things.

It is the difference between what they pay for signals and what they can charge for the package. And they need -- they can't just maximize that difference, but they also have to figure out that that attracts subscribers. So their job is to maximize the product of those two -- the difference that they can get between what they pay and what they can charge times the number of subscribers.

So they pick programming that gives them a margin, plus they pick programming that will attract subscribers to their systems.

Q And in particular, with respect to distant signals, how do cable operators make money with distant signals?

A On distant signals -- and I left one part out of my previous answer, which is cable operators also make money on advertising on some of the signals that they carry. They get time for advertising. On distant signals they get no advertising time, so they make no money on advertising.

What they make is that if a distant signal gets additional subscribers, then they -- or allow -- it either gets them additional subscribers or allows them to charge more for their basic package. Those are the two factors that they would consider in -- when they make the decision of whether or not to carry a distant signal.

The other idea is if they're -- depending upon what other channel they may have to not carry in relation to it, so it's sort of the opportunity cost of carrying the distant signal. What other signal could they carry, and would that attract more subscribers or allow them to charge more? And then net out the cost of the other channel that would be foreclosed from that.

Q All right. Now, what basic methodology did you use to approach that question of relative marketplace value?

A I used what I consider a relatively standard economic approach to use regression analysis to look at the question of the relative value of these distant signals.

Q And what were the fundamental building blocks of the regression analysis?

A The pieces that went -- so the steps that I undertook to -- I'm not sure I understand what you mean by "building blocks."

Q Well, did you compare -- strike that. What's the reason for using a regression analysis in this kind of situation?

A Okay. What you have is you have people buying a package of programs, and the regression analysis allows you to figure out how much the different pieces of these packages are worth.

The tools of -- because you have people buying different packages of distant signals and different combinations, and paying different amounts of royalties for that, you are able to tease out the different piece -- how much each piece is worth.

Q So the basic building blocks of this particular regression are the program -- distant signal programs on the one hand and the royalties paid by the cable operator on the other?

A Right. Well, I would say the basic building block is a whole model of things. What does the -- what generates the royalties for a cable system? And it's the distant signal royalties. It's the characteristics of the distant signal, and then a lot of other factors that affect what this cable operator can change for its services. So it's not just the two pieces, but it's a lot of other factors as well.

Q Okay. And how does a regression analysis approach that analysis of all those different factors that contribute to the final outcome?

A I'm trying to think. This may be a good time to sort of give an example of something that I sort of found that may be -- with this kind of -- can I go up to the board?

JUDGE VON KANN: Sure.

THE WITNESS: Okay. If you're trying to think about a -- if you're trying to figure out how much a house sells for -- or not how much a house sells for but how much an additional bedroom might contribute to the price of a house, or where you sort of see if you -- you have the number of bedrooms, and you had price on this side.

If you have one-bedroom, two-bedroom, three-bedroom, or four-bedroom houses, what you'd see is sort of a bunch of different houses -- one bedrooms, so -- and this is why I use Powerpoint slides in my class, because I'm not a very good drawer.

And then you might see the two-bedroom houses selling for more, and three-bedroom houses selling for more than that, and your observations are on four-bedroom houses. And there are some one-bedroom houses that may be relatively expensive because they're in --

JUDGE VON KANN: Newport Beach.

THE WITNESS: Okay. Or --

(Laughter.)

-- I was thinking the Ritz Carlton Building. So there may be some -- if you're sort of looking even within Washington, D.C., some one bedrooms sell for a lot of money. Some four bedrooms may sell for less money, but you sort of see a general trend of what happens with the price of an additional bedroom. It increases the price of the house.

And you say -- the first thing you would say, well, I can just see that if I just do what I would call the ocular regression, eyeballing this in there, is that you'd say, whoa, wow, okay. I can figure out how much does an additional bedroom add to the price of a house by saying, okay, one bedroom over adds that much to the price of the house.

But you'd think that, well, wait a minute.

That's not necessarily true, because two-bedroom houses tend to be bigger than one-bedroom houses. They also have a living room. They also have an extra hundred square feet of yard. A four-bedroom house may also have a swimming pool, things like that.

So what the regression analysis allows you to do is to say, "Let's control for all of these other factors in trying to figure out what the actual value of an additional bedroom is." And the actual value of an additional bedroom may not be -- going from three to four bedrooms, it may not be that much, because of these other factors.

You may be paying a lot of money because your four-bedroom houses tend to average 3,000 square feet and your one-bedroom -- or three-bedroom houses tend to average 2,500 square feet. So you'd want to correct for the total square footage of the house and other things. So that's what the regression analysis allows you to do is to tease out the factors and get a more precise estimate of what these individual factors are.

And you never see in a house what the

price -- people don't list, you know, second bedroom $20,000, third bedroom $15,000. They don't have prices on what the extra bedrooms cost. But from an econometrics perspective, you can figure out what these things are worth in the price of a house.

BY MR. STEWART:

Q Now, in general, what steps does an economist go through in trying to perform a regression analysis in a situation like this?

A What you'd want to do is to, first, determine what's the question you're trying to answer. What am I trying to get at? Then, you would say, well, okay, know that what I'm trying to get is, what is the relative marketplace value of these signals?

The second thing you would do is develop a model that sort of -- that allows you to answer this question, develop an econometric model that allows you to answer the question.

Then, you would go out and gather the data that allows you to figure out the answer to the question or to estimate the model. And then you would estimate the model. And then, when you've estimated your model, you would go and say, do the results from this estimation make sense?

Does the fact that a -- going from a third to a fourth bedroom subtracts $15,000, does that really make sense? And you say, wait a minute, something is going on here. So you go back and check and see what's going on in your model to make sure that actually adding bedrooms does add value or changing zip codes, or whatever you can measure, has an effect. And then, the last step would be to take your results and use them to answer your question.

Q Okay. And just using the simple example of the house -- first, if the question is how much value is there in an additional bedroom, that's step number one in your analysis. Number two is developing the model. How would you go about that in this house example?

A You would gather data -- you would say, what's the relationship between additional bedrooms and the price of a house? So you would probably develop a model that says I want to figure out how to -- how you would put -- develop a regression analysis is the price of the house is a function of the number of bedrooms, the square footage of the house, the square footage of the land, the number of bathrooms, the number of fireplaces, the swimming pool.

All of these things that you see on an appraisal report are probably things, at least that I would start with, in thinking about the value -- trying to figure out the value of a house or the value of the components of the house.

Q So those are additional variables that you would want to -- that you believe affect the ultimate outcome of the price of the house?

A Yes.

Q Okay. And then you would develop a model that would allow you to analyze that, and then you'd gather data on all those different variables, correct?

A All the variables that you think affect it.

Q Okay. Now, when you run the -- you estimate the equation, you said that that means you run the regression, and that happens in a computer, right?

A Yes, usually.
Q Except for the ocular --
(Laughter.)
A Yes.
Q All right. And then you would test the results to see if they make sense. And how would you then use the -- what do the results look like in a regression analysis?
A You would get a coefficient that tells you the value of an additional bedroom. The regression analysis would give you a coefficient that says, "Here's the value of an additional bedroom." And so if that was the question you were answering, you could take the coefficient from that and use that to answer your question.
Q And that would be in terms of dollars?
A Well, it depends on how you're putting your -- how you put in your variables. You can -- sometimes the variables may be measured in logarithmic form or percentage changes, so you want to say what -- you'd want to make sure that you were looking at it as if you were asking dollar value or percentage changes,

what's the question you're trying to answer.

And you may have to convert things from logs, which may give you an elasticity, but this is -- that's how you would sort of convert it, to answer the question that you were asked.

Q Okay. Now, turning to the regression analysis you performed here, would you again go through those steps? First, the question is, what's the relative marketplace value of the distant signal programming that was sold to cable operators in these two years, correct?

A Yes.

Q And what's the second step, developing the model? How did you approach that?

A What I did was I looked at what cable systems are -- what cable -- what sort of things affect the cable system, and the first step was to -- I know that I wanted to get the relative marketplace value of these different types of programs, so I knew that -- and my model was presuming that these would have an effect, so I -- and I think that the components of any system should have an effect on the value. But there's lots of other things that also have an effect.

So I looked at things like the number of subscribers. Bigger systems would have potentially a different affect of the change in royalty -- or the change in the composition. The income in the area, the number of local channels that are on the system, because they may be substitutable for distant signals.

The number of -- the total number of channels on a system. The more channels that somebody has on a cable system the more attractive it is for subscribers. These things affect the royalties, because the royalties are a function of numbers of subscribers times the rate. So either these -- all these factors affect both the numbers of subscribers and the rates they can be charged for the basic rate.

Q Okay. And turning to page 7 of your testimony, would you explain what this equation is here?

A So this is the basic model that I estimated. It's actually identical to the model on page 11, but page 11 has more -- has the control factors that are listed at the bottom of that, doing it and more -- delineated more.

So what equation one does is it sets up an equation that has royalties as a function of the minutes of programming on distant signals for each cable system, plus the control factors.

So I estimate this may be for -- to parallel the example on the board, you might think of this as house price is a function of number of bedrooms, number of bathrooms, swimming pool, and other things that I would have in there, and then other control factors that were not -- that are included as well.

Q Okay. And looking at the particular variables that you've listed on page 7, what are those variables? Program Suppliers, first, for example.

A So Program Suppliers would be the minutes of -- minutes that were categorized by BIA as Program Suppliers minutes on a cable system on all of the distant signals that are carried by that cable system.

So if a cable system carried one television channel as a distant signal, I would just take the minutes of Program Suppliers from that category -- from that channel and have that as the minutes on that cable system.

If it had two, I would add the Program Suppliers minutes from those two distant signals together to get the number of minutes of Program Suppliers.

Q Okay. And then --

A And the same thing for all of the other categories that are listed on page 7.

Q Okay. So each of those variables is just the raw number of minutes in the category on the stations that the particular cable system carries, is that right?

A Yes, exactly.

Q So the unit of measure, like the house in your example, in this case is a cable system?

A Yes.

Q This is a Form 3 cable system?

A Yes, Form 3 only.

Q Okay. Now, why did you include low power and Mexican station programming minutes in this -- in your equation?

A Because they were distant signals that were carried by the systems and may be important for determining the characteristics of royalties, just like all the other factors are.

Q Just as an aside, why did you not include any factor for music that was in the programs themselves?

A Well, I didn't have -- the music -- my understanding is that music is carried across all program types, and included in all program types. And I didn't have -- when I sort of thought about this, it was very difficult, because these are relatively standard categories and able to be put together.

I didn't -- and I didn't have data on music in a similar vein, and it was -- it may be possible to develop a model with music. We didn't have data on music, and I wasn't -- and so I didn't spend a lot of time trying to think about how to model music as well.

So the -- my analysis would be, once you've decided on how much music should get, then you can divide the rest of the shares in -- based on, well, hopefully what I said, but that would be a way of doing it. It excludes the award to music, essentially, and takes that as something that has to be divided -- decided separately from this.

Q Let's look at the additional variables you included beyond the program minutes themselves. First, over on page 9 in the second full paragraph, you say the model controls for the number of subscribers on a system. Do you see that?

A Yes.

Q Why are subscribers relevant to your analysis?

A You have some very big systems and some very small systems, and the effect of minutes may differ. And a big change in royalties may differ very much because of the size of the system, that adding subscribers and being able to charge more because of more attractive programming in a big system, may lead to a much bigger change in royalties than on a small system.

So if you didn't control for the numbers of subscribers, you may get very different and misleading results.

Q The next factor is the number of channels, total channels provided by the cable system, and you discussed that before. What's the reason for the relevance of that?

A The number of channels -- this sort of says, how attractive is this cable system to subscribers in general? That you would expect that a cable system that had 100 channels would be more attractive to subscribers than one that had 24 channels, and so either we get more subscribers or be able to charge more or both, and, therefore, we'd have higher royalty payments. And since we're trying to explain the level of royalties, the number of channels is important in determining the level of royalties.

Q And the number of channels includes, among other things, the cable networks that cable systems provide to their subscribers?

A Yes, it does.

Q All right. The next variable you talk about is the number of local broadcast channels. Can you describe how that's relevant?

A The number of local broadcast channels is something that is potentially important, and it has a number of -- it can have a number of possible different effects. I think that probably everybody in the room here could spin a different story on what the effect is, but the fact is that it does have an effect.

The more local channels you have may lessen your need for distant signals, because you have a lot of the same fare that's carried on local channels that's carried on distant signals that are imported. So that may reduce your need for distant signals and reduce the royalties.

The other -- and then, also, you have an idea that the more local channels you have, cable may be less attractive. If you have more over-the-air -- you may carry more local channels, but that may also be the fact that you have more local channels available over the air in your area as well.

And so local channels seem to me to be an important variable that may be different from the effect of total channels in terms of the attractiveness of a cable system.

Q Next, you talk about differences in income across the different areas. Do you see that on page 10?

A Yes.

Q Why is that relevant?

A Cable is a normal good, and from an economist's perspective a normal good means that as your income goes up you buy more of it. So as the income of an area -- a very poor area may have less propensity to buy cable than the areas that have more money or may be able to charge -- they may be able to charge more. So --

Q Okay. And then you talk about the 3.75 royalty variable. Do you see that?

A Yes.

Q And how does that -- how is that relevant?

A Certain channels are charged a 3.75 royalty -- certain channels on certain systems. And to the extent that they pay a much higher royalty rate, we would expect royalties to be much higher on those systems. So including that would help explain some of the increased royalties where there are 3.75 stations carried.

Q Now, over at the top of page 11, you have this same basic regression formula with the program minutes variables as well as these additional variables. There's also a partially distant variable noted there. What is the reason for including that?

A On cable systems there are some distant signals that are partially distant. For part of the system they're a local channel, and for part of the cable system they're a distant signal. And the cable operator doesn't pay the full royalty rate.

If it's half local and half distant, then the cable operator would only pay half the royalties on that. So you would expect royalties to be lower if a signal were partially distant than if it were a fully distant signal.

Q And then, finally, you've got the years 1998-2, 1999-1, 1992-2, those are the semi-annual accounting periods within those years, is that right?

A Yes. Those are what we call dummy

variables for the different years. And when you use dummy variables, you have to exclude one. So they used -- the coefficients on these would be relative to 1998-1.

Q And what's the reason for dummy variables there?

A Is to see if there are changes over time in these relationships that would affect -- that would be accounting for changes over time.

Q And so going back to your house example, that -- if you had different years worth of house price data, including a dummy variable like this would, in fact, extract the differences caused by the fact that you had purchases in different years, is that right?

A Right. It may account for the fact that the general level of pricing has been going up over time, and that would take account of that.

Q Now, going back, again, to the house example, and your drawing there about the value of an extra bedroom, what you've drawn there is just the difference in the prices that you would observe for a four-bedroom house as opposed to a three-bedroom house, correct?

In other words, that triangle on the -- that you've drawn on the right-hand side there reflects the increased value you observed between the average three-bedroom houses and the average four-bedroom houses?

A Just the straight average differences, yes.

Q Right. And then, when you do the regression analysis, explain what happens to all the variables that you put in and how you come out with your ultimate relationship between the number of bedrooms and the house price.

A So what you might find is that if you -- let's just assume that the only difference between a three-bedroom -- or that these houses -- the only other difference that occurs is that the houses with more bedrooms are bigger. So you're paying part of your money -- part of this increase is attributable to more bedrooms, and part is attributable to more square footage.

So what you'd find is that you'd probably find a relationship where this much was due to the bedroom and this much was due to the square footage. So you'd find sort of a less steep slope of your line of the extra bedroom. So the extra bedroom, instead of being sloped like this, would be -- the slope would be like that more.

So you have less of -- the regression would allow you to say, well, bedrooms are worth not -- the average difference between a three-bedroom house and a four-bedroom house is $100,000, but only $80,000 of that is worth the extra bedroom. The extra $20,000 is for the extra square footage of the house.

JUDGE VON KANN: You mean square footage outside of the bedroom? That is, if the only amount of added square footage is what the bedroom gives, I would assume that's the same --

THE WITNESS: Well, this is --

JUDGE VON KANN: -- variable.

THE WITNESS: This would be --

JUDGE VON KANN: But you're saying the living room is also a little larger or the kitchen is also a little larger.

THE WITNESS: Well, the -- you could think about it as they would squeeze a fourth bedroom into the same square footage is what this would do, just the fact that you have it as an extra bedroom. And then, the fact that it's a bigger house and actually has the extra square footage of the bedroom, or the square footage of the bedroom and the extra square footage of the living room and every other room is bigger, is part of it.

So I may have my ratios very off in terms of the value of the extra bedroom thinking of it that way, but it was more of an example, not trying to estimate that relationship as well.

BY MR. STEWART:

Q So the regression analysis takes -- in effect takes each of the variables, figures out the relationship holding everything else constant, and then somehow combines all of those results to extract a true relationship or a truer relationship?

A Yes. Yes. Because if you just did this simply, this would overestimate the value of the extra bedroom.

Q Okay. Now, turning to page 11 of your testimony, under heading B there's a title "Robustness Tests." Would you describe what those were, please?

A Okay. I did first -- equation 2 is what we call a standard linear regression, and this data is -- that we have allows us to do some different econometric estimations, what I would call panel data systems. And these are what economists call fixed effects and random effects.

And essentially what they take account of is the fact that we have -- the cable system in each area is generally in the sample multiple times. And so we can take advantage of that information and try and get -- use that information in our estimates.

The fact that I'm observing your performance in junior high and high school and college, I know I have the same person, so I can take advantage of that fact as opposed to observing different people three -- three different people.

I have some -- that allows -- there are econometric techniques that allow you to take advantage of the fact that you're observing the same thing multiple times, and that's fixed and random effects regression analysis that I did that took advantage of that.

Q Okay. Now, turning to page 12, you discuss your additional modeling considerations, is that right?

A Yes.

Q First, how did you take account for systems that paid royalties despite carrying no distant signals -- that is, the zero DSE systems?

A Those -- I excluded those from my analysis, because they did not provide any information about the relative values of different cable program -- programs on distant signals. This would be like excluding the people who didn't buy houses, because you can't find out anything from them, because they -- about the relative values because they haven't told you any information about how they -- they may value one-, two-, three-, and four-bedroom houses, but there's no information that you can discern from their behavior.

Q That allows you to tell the relative value of the different components.

A Right.

Q And by the way, was the distant signal -- was distant signal carriage by cable operators in these years, in your view, a market?

A Yes.

Q In what respect?

A Cable operators were deciding which distant signals they wanted to carry, and they realized that they actually -- for the ones that I observed, they -- or the ones that I include in my analysis, they pay a price for what they carry. And they make decisions about whether or not to carry the distant signals based on how it affects their royalty payments.

Q Looking at page 13, you talk there about lagged subscribers and channels. Would you explain what that was?

A Yes. This is -- we used subscribers and channels at the start of each accounting period as opposed to the end of the accounting period, because one of the things that I -- there is the possibility of what's called endogeneity, that including an extra -- including these extra minutes may affect your numbers of subscribers.

So by having the subscribers at the start of the period, then the minutes that are carried subsequently don't affect the numbers of subscribers at the start of the period necessarily. They can't effect the numbers of subscribers at the start of the period because that's predetermined.

So that this allows you to get away from this endogeneity problem but still account for system size and numbers of channels.

Q And I forgot to cover one thing about the previous subject. For cable systems that didn't carry any distant signals at all, you didn't include them in your analysis, correct?

A Correct.

Q You included all Form 3 cable systems that carried any distant signals, is that right?

A Yes. Well, a couple of exceptions where we couldn't get income data, and we couldn't get lagged subscriber data.

Q Okay. And we'll cover those exceptions in a moment, but --

A Okay.

Q -- you discussed there at the top of page 13 the difference between systems that have .25 -- that carry .25 DSE or .5 DSE or .75 DSE or 1 DSE, do you recall that?

A Yes.

Q What does that mean? What's the difference between those systems, if any?

A Well, the difference is, from my analysis, what you want to see is what price these cable systems are paying for their distant signals. And depending upon your view of what the marginal signal might be, you can see that a system that has -- is carrying 1 DSE, it faces clearly a positive price for its subsequent distant signal that it carries, no matter what kind of distant signal that is.

For someone who is carrying less than one -- less than .76, .75 or lower, if they carry a .25 DSE, their change in royalties is going to be affected by the change in subscribers and the amount they can charge, but is not going to increase their royalty rate. It does affect the base on which -- it can affect the base on which they're charged, but it doesn't affect the rate.

So there's -- but if they carry a 1 DSE, then it also affects the rate. If their next signal that they were considering should I buy or not buy is a 1 DSE, then it affects the rate as well as the numbers of subscribers and the rate they charge -- and the price they charge for cable service.

Q And I should have started with this question. Form 3 cable operators pay a minimum of 1 DSE, no matter how many distant signals they carry, is that right?

A Yes.

Q Okay. Now, turning to page 14, first, did you review any prior regression analysis that's been presented in these proceedings?

A Yes, I have.

Q What was that?

A The analysis by Dr. Besen in the previous hearing.

Q That's the 1990 to 1992 proceeding?

A Yes.

Q And that was on behalf of the Program Suppliers?

A Yes.

Q Did your approach differ -- does your approach differ from the approach Dr. Besen took in that proceeding?

A In general, we both started out by saying, let's look at data of cable operators' decisions in terms of carrying and not carrying systems and the makeup of the programs. That was sort of the general framework, but then our approach differed in a number of respects.

First, what he did was to look at trying to -- looking at the -- at only systems that had a change in distant signals. So I looked at all distant signals, and he looked at only those that had a change in distant signals.

So if they added or dropped or swapped a distant signal, that's a relatively small percentage of total signals. And these systems may differ in some respect from the systems overall, or -- and also you may not have as much information on that.

The second difference is that he also looked at changes in royalties from period to period as opposed to the levels of royalties in the different periods. And that may -- you may be able to explain the changes but not the total level. That's a second difference.

And a third difference is that he weighted his -- he weighted his viewing minutes by -- or his minutes of programming by the ratings, and I didn't think that was appropriate since what we care about is cable operators' subscriptions, not whether -- implicitly you care to some extent about people viewing it, but what the cable operator ultimately cares about is people subscribing.

Q Now, going back to the difference between looking at changes in royalties versus looking at total royalties actually paid, I note on page 14 of your testimony rather tragically that you use the example of raising -- or a rise in ticket prices for the Washington Wizards in the year Michael Jordan began playing there. Do you see that?

A Yes.

Q Using that example, just for old times sake --

(Laughter.)

-- can you explain --

A I didn't mean to twist the knife in you guys by --

(Laughter.)

Q Can you explain what -- why that makes a difference and how it -- how the change differs from the question that you were answering here?

A So in this -- you may be able to explain that Michael Jordan caused ticket prices to go up by $5 or $10 or -- but you wouldn't necessarily be able to explain that ticket prices around the league were already $50. And what I'm trying to figure out, and what I think the job of this Panel is, to allocate all the royalties, not just the extra $5.

Q All right. Now, turning to the -- first, did you review any of the criticisms that were leveled by other parties against Dr. Besen's analysis?

A Yes, I did.

Q Which ones did you review, do you recall?

A I looked at Dr. Schink's analysis on behalf of the Commercial Television, I looked at Dr. Crandall's on behalf of the Sports, and Dr. Salinger's on behalf of the Devotional Claimants, I believe.

Q Now, did the criticisms in those testimonies apply to your analysis as well?

A I believe most of those criticisms were directed at his implementation of the methodology and not the methodology. Dr. Salinger said he thought it was a good methodology, but it didn't work in that case. And I think that a lot of the criticisms were that he didn't account for other factors that might be going on in the area, and that was accounted for in mine by the numbers of subscribers, the income the channels, things like that.

And there was substantial criticism as well on the weighting by viewing minutes, which I didn't do either, and then Dr. Schink had some technical econometric problems, as did the others, and

I think that those are not applicable to mine either.

Q All right. Now, turning to page 16 of your testimony, you describe the other data. Would you please explain where you obtained the data for the various variables that you used in your regression analysis?

A Okay. It would probably be easier if I draw this up a little bit.

Q Sure.

A May I erase this?

Q Sure.

A Okay. You guys have all this committed to memory?

(Laughter.)

JUDGE VON KANN: Well, we can memorize the entire testimony, but --

(Laughter.)

THE WITNESS: A picture is worth a thousand words.

So what I did first is we got data from the Cable Data Corporation, which was a big data set, on every Form 3 cable system. So we had a whole bunch of lines of information about every Form 3 cable system, and that said -- and what actually we had -- let me make sure I get this straight.

We had information about their subscribers and their channels and everything else from that. We also had information about the channels that they carried. We had -- this data set got very big, because there was a line for every cable system for every television channel they carried.

Okay. So what we were able to do, we -- so if this was cable system 1, it would have channel AB -- or I shouldn't use ABC. I'll use KXXX. And then cable system 1, KYYY. And then all of the demographic information about the cable system is identical.

What we got programming minutes from BIA that said for each of these channels we had a -- so for -- we had, for the Program Suppliers, Sports, and every other category that I've listed, we had the number of minutes that were carried on station KXXX.

JUDGE YOUNG: For what period of time?

THE WITNESS: For each of the four

accounting periods. So separately we had -- so this chart, this is observation -- this observation 1 is for 1998-1. Down further in the database we might have the exact same observation, cable system 1, KXXX, for 1998-2.

JUDGE YOUNG: So the total number of Program Suppliers minutes for that accounting period for this cable system on that particular distant signal.

THE WITNESS: Well, actually, what we have is this -- the database from BIA just has the stations. So KXXX may have been on cable system 43 as well.

BY MR. STEWART:

Q Dr. Rosston, the information that you're describing on the left-hand side you obtained from Cable Data Corporation?

A Yes. Everything in this box right now is from Cable Data Corporation.

Q And the --

A And the stuff over here, we had a database of 3,000-some observations of the -- what we had was a box that said, "Here's KXXX," and divides it up into the different programming minutes.

So then we populate KXXX with 100 minutes here and the exact same 100 minutes, if this is the same accounting period. So some stations -- WGN is in this a lot. And the differences are -- for 1998-1 is the cable system -- and this is WGN, WGN, WGN, but the cable system changes. The minutes don't change. Okay?

So now we have, say, 20 minutes of sports and 100 minutes of Program Suppliers data -- minutes in 1998-1 on this channel on this system. We also might have 200 minutes and zero. What we could do then -- what we did then was we said, okay, we want to create a database that says just for all -- we want to add all of the ones that have 1998-1 for cable system 1. We're going to add up these minutes.

So we would end up -- what we did was we took this huge database and compacted it down, because we got rid of all the multiple observations. We also got rid of -- the vast majority of these stations were actually local stations, so we ignored them when they had a field here that said L for local. If that were L, we would not add the number of minutes in.

So then we could just say, okay, on this cable system, in 1998-1 on cable system 1, it had 300 minutes and 20 minutes. And then we'd have cable system 2, 3, all the way down, and then we'd start 1998-2, and we'd have cable system 1 again.

JUDGE YOUNG: And how do you deal with partials?

THE WITNESS: Partially distant signals -- what we did was we added the minutes in, and there's a code X for partially distant, and we said -- over here we said, "Is there any -- are there any X's?" And if there's an X, we have a field partially distant, and we put a dummy variable 1 that said if it's a partially distant -- and also, if there was a 3.75, we had a 1 as well.

But that all came from this database that said whether there's a 3.75 or --

JUDGE YOUNG: So with the partially distants you would still have, for that example, cable system 1 for 1998-1, you would still have the 300 minutes for the Program Suppliers, you just have another variable in the formula to deal with it.

THE WITNESS: Exactly. And one of these might be partially distant, and the other not, but we'd have a 1 for the dummy variable, so we know that there is a partially distant signal and that should reduce royalties.

BY MR. STEWART:

Q Do you recall how many -- well, so you ended up with all of these now compacted sets of data that show the total number of minutes in each different category that were actually purchased by cable system number 1 in the first half of 1998, is that right?

A Yes.

Q And you had that for each of the cable -- Form 3 cable systems in that accounting period, correct?

A Yes.

Q And when you add, then, 1998-2, 1999-1, and 1999-2, how many total observations did you have of Form 3 systems?

A Can I peek at Appendix B to get the exact number?

Q Yes. That's in Appendix B of your testimony?

A Yes. I think it's something on the order of 9,000, but I can get you the exact number. And actually, I think I misspoke for a second, which is we included all of the minutes here, including those with zero DSEs. And we took out the zero DSEs, the systems that had zero DSEs, in a subsequent step.

Q But the ones with zero DSEs had no distant signals.

A Right. They had zero minutes in all of these categories.

Q Okay. So how many did you have -- including the ones with no distant signals at all, how many of these cable system observations did you have?

A 9,227 observations.

Q Okay. And there are only 2,500 or so Form 3 systems, correct?

A Yes.

Q On average across these periods?

A Yes. That's -- so some of these systems became Form 3 systems or became Form 2 systems. So they weren't in the sample the entire period.

Q So the 9,000 figure is just counting the cable systems in each accounting period across the four accounting periods, correct?

A Yes.

Q Okay. Then, when you took the zero distant signal or zero DSE systems out, how many observations were left at that point?

A It was 7,529 observations.

Q Okay.

A That was -- actually, that's the number that we used in our regression. There was -- there were a couple of other adjustments as well that got me down to 7,529 observations.

Q Okay. Let's look at Appendix B briefly. I guess we haven't broken them out there.

A Right. So there was two other adjustments. One was when we got the income data, we didn't have income data for Guam and the Virgin Islands. And so we couldn't add those into our regression analysis, because we didn't have the data for them, and then we also had 18 observations where we did not -- Cable Data Corporation didn't have lag subscribers for -- what we had to do was for 1998, the lag subscribers were the subscribers at the end of 1997.

And we got that data from CDC, and 18 observations dropped out when they did not have data for that as well. So we ended up with the 7,529 observations.

Q Okay. And the 7,529 observations are the cable system -- each is a cable system with the number of minutes in each of the categories that are represented among the distant signals on the system for that period, correct?

A Yes.

Q And then the other data, that represents the variables that you included, including the amount of royalties that they paid, as well as the income levels and their market, etcetera, etcetera, correct?

A Exactly.

Q Okay. And turning to Table 1 on page 17 of your testimony, would you explain what that data is, please?

A We should make sure -- this is one of the pages that says "corrected" on the top. Make sure everyone is on the right page.

JUDGE VON KANN: February 14.

THE WITNESS: Yes. It was a nice Valentine's Day.

(Laughter.)

On Table 1, these are summary statistics. This is standard when people present data work is to tell you what the variables are, what their means are, standard deviations, and trying to give you an idea of the magnitudes of the numbers of the variables that you're looking at.

So the first group of variables are the minutes of programming in each different category on -- the mean minutes on a cable system. So you would pick a specific -- this would be the average across all the cable systems, just the straight average of the number of minutes in each category.

JUDGE YOUNG: For this roughly 7,500 set.

THE WITNESS: Yes. Yes. Because the title -- I tried to be clear. I hope I -- with positive distant signal equivalent. So that was down to the 7,500 sample, exactly right.

BY MR. STEWART:

Q And if you added up the average -- the mean of the minutes in the various categories, you might arrive at more than one station's worth of minutes, is that right?

A Yes, because cable systems may carry more than one distant signal.

Q And this is the number of minutes across 84 days of data. That's what you received from BIA, is that right?

A This is the mean across the observations, right.

Q Okay. Now, and then looking at the number of subscribers, and the number of activated channels, is that the mean across these 7,500 --

A So the average cable system would have 22,800 subscribers at the start of the accounting period.

Q And the indicator for the 3.75 royalty rate is 0.11. Would you explain what that means?

A Sure. This is a -- what we call a dummy variable. It doesn't have anything to do with my intelligence. But it's a zero or a one, so this means that 11 percent of the cable systems had a 3.75 royalty payment. Eleven percent of the cable systems in our observation.

And the same is -- the same interpretation is true for the partially distant. Twenty percent of the systems had a partially distant signal carried.

JUDGE YOUNG: You know, you just asked a question, Mr. Stewart, I just want to make sure I understand. When we talk about total programming minutes, then, are we talking about extrapolating the BIA data to say, what are the total programming minutes on that system throughout the whole accounting period? Is it just focused on the number of days the BIA study focused on?

THE WITNESS: I used just the BIA data, and so that's -- I didn't extrapolate it to -- but what you would end up doing is multiplying everything by the same number, because we took a sample, and then dividing back through by the same number, so the answer would stay the same.

JUDGE VON KANN: The relationship would stay the same, whether you used the sample number or multiplied them all by whatever it is, four, to get up to --

THE WITNESS: Right.

JUDGE VON KANN: Or two I guess maybe. You've got 84 days, something like that.

THE WITNESS: 84 days over two years.

JUDGE VON KANN: In order to get to 180 days, you'd have to multiply by --

THE WITNESS: And there was 84 days over two years, so it's about nine --

JUDGE VON KANN: Okay. Whatever it is.

THE WITNESS: Right.

JUDGE VON KANN: But the relationship would presumably --

THE WITNESS: Exactly. So my analysis is sort of limited to the using -- imagining this as the 84 days.

JUDGE VON KANN: Okay.

THE WITNESS: Okay.

BY MR. STEWART:

Q Okay. Turning to page 18 of your testimony, the section marked "Results," let me ask you, first, Dr. Rosston, in your opinion does this regression model with the variables you've included, and the additional modeling considerations that you've accommodated, provide a substantial basis for measuring the relative marketplace value of the distant signal programming types?

A Yes, it does.

Q And why do you say that?

A Because it measures the actual marketplace behavior of the cable systems and the Program Suppliers -- the suppliers of programming. I guess I shouldn't use the other -- shouldn't say it the other way around. That people are buying it, buying these programs and making decisions between different signals in the marketplace.

Q What were the ultimate results of your regression analysis, first?

A The regression analysis results are presented on page 19. Again, the corrected page 19. And should I go through those?

Q Sure.

A So what we did was we regressed these -- all these variables on the -- plus, as you look down at the -- right above the line, indicators for the accounting periods, the time dummies, which are not -- the results for the time dummies are not reported, but they were included. We regressed all of these variables to explain the royalties in the -- paid by the cable systems.

So what you get is the regression coefficient that says, for example, .152 for the minutes of Program Suppliers programming. So an additional minute in this -- on the average cable system would add 15 cents. An additional minute of Program Suppliers would add about 15.2 cents to royalties. An additional minute of sports programming would add $1.63, and an additional minute of commercial TV would add 14.6.

So you see sort of the relative values of minutes of different programming types. Sports is substantially more valuable than the other stuff, which when I come to sort of checking the reasonableness of results makes some sense.

And then you get down to numbers of subscribers. So these -- the coefficients -- that's how you interpret the coefficients on the minutes. The numbers of subscribers for adding an additional subscriber would add 76 cents to royalties over the six-month period, and this is -- sorry, these are adding additional royalties over the six-month period. So, and that's -- each of these -- an additional channel would add $34.

I have asterisks on a number of these things. The asterisks are for statistical significance. Are they statistically significantly different from zero? Are you confident that they're different from zero? And some of them have that and some do not. But most of the variables of interest that are in the top half do -- are statistically significantly different from zero.

JUDGE YOUNG: So you're suggesting if we

had Canadian programming it's less valuable?

THE WITNESS: That one doesn't have -- that one is not statistically significant. My best point estimate is that actually adding -- that the Canadian programming under this estimation is insignificantly different from zero, but may be negative. It may be positive.

BY MR. STEWART:

Q And what about the count of local channels? What does that suggest, or what does that imply? Sorry.

A Well, once again, it's insignificantly different from zero as well. But as you add local channels, the royalties go down, and that may be because of the -- this similar programming effect.

Q Just going back to your description of the steps that an economist would take in doing a regression study, the second-to-the-last step or so I guess was checking the results to see whether they make sense based on the expectations you would have about the industry, is that right?

A Yes.

Q And could you describe how that applies to these coefficients that were the result of your regression analysis?

A Sure. Let's start at -- the indicator for partially distant -- I'll start from the bottom -- is that for the 3.75 and partially distant, when you're paying the higher royalty rate, your royalties go up by a substantial amount. And that sort of makes sense, that when you're paying royalties at 3.75, if you're paying that, you're paying a much, much higher royalty rate. So that one is positive.

And partially distant, you're paying only for half the signal or for part of the signal. Your royalties go down. So those two make sense.

Q And just stopping you there for a second. This coefficient says that a cable system that carried any one of its distant signals at the 3.75 rate has that higher royalty, is that right?

A Yes.

Q And similarly, if the system carries one or more, but possibly not all, of its distant signals as partially distant, then its total royalties would be down by that coefficient, is that right?

A Yes.

Q Okay.

A And these are holding the number of minutes constant. So if you added more channels, they would affect -- that would affect the number of minutes. If you added a non-partially distant signal with a partially distant, you would have -- the correction for those additional channels would be in the minutes category, so that's how that gets explained.

Q Okay.

A The count of local channels we talked about as being similar fare on that, and that may be why it has a negative coefficient. Average household income is positive but not significant.

One test -- just a sort of general rule of thumb, if you look at the -- the standard errors are what's in parentheses. If you double the standard error, then if it's -- it's actually 1.96, but if you double it it's close enough. You can see that doubling 161 is greater than 286, so it's not significantly different.

But the general rule of thumb, if you want to look at these things in a quick manner to see -- and you can see that when we get to the number of subscribers, .032 doubled is .06, so .76 is substantially different from zero. That would be confident -- you're very confident that that number is way different from zero.

I forget where I left off in explaining things. Number of activated channels, I believe?

Q Yes.

A Is positive. The more channels you have, the more subscribers you will get and the more royalties -- and the higher price you will be able to charge. It's positive. That makes sense. The more subscribers you have the bigger system you have -- adds 76 cents, and that's very much close to the -- it's close to -- if you just divide the total royalties by subscribers, it's very close to that number, to the average.

It's slightly different, but that's because we're not taking a simple average here. We are correcting for other factors, so it's not exactly the same, but it's close, which makes -- gives you confidence that that number is estimated very well.

And then, going up on the minutes, you made a very good point that Canadian is negative, as is devotional. And those are -- those are the ones that are -- the Canadian one is insignificantly different from zero, which means it also could be on the other side of zero, being positive.

The devotional one is negative and significant, and there are several possible reasons for that. One is that devotional programming is sold as part of a -- you buy a whole set of channels, or you buy a whole signal, not the individual pieces. And so you may not be able to buy -- you may be buying more devotional than you want.

Second is that the devotional guys pay -- some of the devotional guys I understand pay for their placement where they are paying the local channel to get on, but the cable system doesn't get paid to have this program put on. So he gets none of that benefit.

Third is that a lot of the devotional

stuff is not subject to the -- I understand is not subject to the non-syndicated -- syndicated exclusivity or non-duplication. So that you may get two different episodes or two -- the exact same episode on two different channels of the 700 Club, and adding a second channel doesn't add you any value.

In fact, it can subtract because you could be showing something else. So there are several reasons why that may be a negative amount on that one.

Q All right. Now, how can you pick those coefficients and turn them into shares of the distant signal royalty fund?

A I think the easiest way to do that is to sort of explain Table 3.

Q Which is on page 23 of your testimony?

A Yes. So if you look at Table 3, in the first column are the exact same coefficients that I got from the regression analysis. Those are just repeated. So, again, 15 cents for Program Suppliers and $1.63 for sports.

Those are the value of the additional minute, the marginal value. And what we did then in column C is said, what are the total minutes? Because if you have a price that's the implicit price for -- that would be willing to be paid, the coefficient is essentially what an economist would call the shadow price or the implicit price of these minutes.

You want to find what's the total value of these. You multiply the price times quantity. So we have the quantity of minutes in column C of the minutes in each programming category that we saw in all of the systems, and we multiplied in column D -- we just multiplied price times quantity and got a value of the minutes for each category.

And we put devotional and Canadian at zero, instead of negative, in that. And we came up with a value of the minutes of $57 million.

Then, we said, "What's the implied share of the royalties?" just that, for example, Program Suppliers had $27.8 million worth of value, divided by $57 million, so they accounted for 48.7 percent. And that will fill down if you do Excel. That just has the exact same formula; 18 over 57 gives you 32 percent, and so on. And they add to 100 percent.

The last column we did, we just allocated the .34 percent that was from low power and Mexican in the same ratios to everybody else. We just assumed that they were not part of it, which is why the number 56,940, you can -- is slightly less. That's the number of -- that's the value from -- actually, it's 57 -- 126 and 71 there.

So we just divided and allocated the low power and Mexican stations percentages to everybody else, since they're not part of the claimants in this.

JUDGE VON KANN: Why did you -- since you had data for the four separate periods, why did you do a single number for '88 -- for '98/'99, as opposed to one number for '98 and one for '99? Which is what we have to come up with. Why didn't you help us more?

(Laughter.)

THE WITNESS: To be honest, I didn't think about it. I mean, it would be possible to do two separate regressions for -- what I wanted to do when we put the dummy variables in for the different time periods was trying to take full advantage of the information to see what you could get. So --

JUDGE VON KANN: Did you notice much -- maybe you didn't look at this, and so don't guess about it -- but if the data for '98 and '99 appeared substantially similar, such that you think there's no reason to believe the percentages would be much different for one year than another -- I guess that's one thing -- do you have any sense at all from working with this data whether there seemed to be much variation between '98 and '99?

THE WITNESS: I don't recall seeing a big difference, but I don't want to give you assurances at this point.

JUDGE VON KANN: Okay.

BY MR. STEWART:

Q On page 24 of your testimony, in the middle of the page there, you talk about whether the commercial television percentage share that you've calculated represents a lower bound. Is that the word? Is that what you use there?

A Yes, I did.

Q Would you explain why you believe that?

A There were two factors. One is we did

these additional regressions with random and fixed effects coefficients. And in both the random and fixed effects models the share for commercial television was higher, and the -- so that provided the confidence that these were -- that I had not overestimated this. When I was able to take more information into account, I was able to -- it came out to be a higher estimate.

And then, second, is that there is a lot of other -- there may be substantial value in putting together a group of programs as you -- what I would call compilation, that people in the cable systems routinely buy channels. They don't buy programs individually very often.

And so they pay for this value, the people do, in creating a channel and creating a package of programs as well. So I think that that's something that's of value that's not incorporated in my analysis at all.

JUDGE GULIN: Dr. Rosston, that kind of leads into a question I have. When you use the word "value," you're equating that with what is actually paid by cable systems for minutes of programming. That's the assumption that you're making I guess, is that that's an equivalence.

If we look at, for example, public broadcasting as opposed to other groups, Program Suppliers, Sports, and Commercial TV, public broadcasting consists of discrete channels of programming, and there may be another way to find out exactly what cable operators have paid for public broadcasting because of their discrete channels.

JUDGE GULIN: So if you equate value with what is paid, is the implication that whatever is paid for those discrete channels of public broadcasting is the value and the value cannot be greater than what is paid for them?

THE WITNESS: What I was looking at was the relative value of these things, that this is a constrained market price, and that maybe if you took away this right, they may have to pay substantially more for these, for all of the different channels.

So what I've done is what they've paid for in making their decisions here. If you have public broadcasting be a discrete channel, one of the questions or problems with trying to figure that out is that the royalty rate is not constant. It's a declining function. So the first channel is -- I believe it's .8 percent, and the second channel is .6 percent.

JUDGE GULIN: All right.

THE WITNESS: And so a lot of what you pay for a channel depends on where -- whether you're the first or the second channel, and that's -- as an economist, I would say whether you're the first or the second channel, based on the data that I've seen, that you can't -- that you always want to be the incremental person, if you're paying a ticket to a movie or something like that, that I'm the marginal guy. I don't want to pay anything. It doesn't cost you any more to serve me.

So in terms of that, it's a little difficult to tease out exactly --

JUDGE GULIN: Right.

THE WITNESS: -- what was paid for specific channels.

JUDGE GULIN: Right. So there is inherent difficulty in trying to calculate that. But assuming you could calculate it, there was a method to calculate that, is the premise still correct, that whatever is paid for public television, that's the value of public television?

THE WITNESS: Well, you'd want to look at the relative value compared to what's paid for the other things as well. So you'd want to look at the relative values of these.

JUDGE GULIN: Okay. Thank you.

MR. STEWART: That concludes my direct. This may be the right time for a break.

JUDGE VON KANN: Sounds like it is. Let's just take a minute, though, to sort of map out the cross examination plan, in terms of who is doing it and how much time and in what order.

JUDGE YOUNG: When we come back from the break, I'd like to ask Dr. Rosston some questions.

JUDGE VON KANN: Okay. Just to go around the room quickly, can I get an estimate of cross examination time? Mr. Garrett?

MR. WINTERS: I'm going to estimate one hour.

JUDGE VON KANN: Oh, Mr. Winters?

MR. WINTERS: One hour.

JUDGE VON KANN: Okay. One hour, okay. Mr. Olaniran?

MR. OLANIRAN: I would probably estimate about three, and I think I was drafted to go first, so that we could reduce -- it may reduce the amount of time that the smaller claimants would have to do cross examination.

JUDGE VON KANN: Mr. Dove?

MR. DOVE: I think about an hour.

JUDGE VON KANN: Okay. Canadians? Mr. Satterfield?

MR. SATTERFIELD: Probably a half.

JUDGE VON KANN: Okay. Music?

MR. LOPEZ: It will be less than that. It will be minimal.

JUDGE VON KANN: Okay. Minuscule I think was the term yesterday.

(Laughter.)

MR. LOPEZ: Well, we don't want to adopt the --

(Laughter.)

JUDGE VON KANN: No, right, right. Okay. All right.

Let's see. That's four, five, five and a half. I guess that's doable with breaks, probably.

And there is a consensus or agreement about the order?

MR. OLANIRAN: I believe so, yes.

JUDGE VON KANN: Okay. And that will be Mr. Olaniran first?

MR. OLANIRAN: Correct.

JUDGE VON KANN: And then?

MR. OLANIRAN: Mr. Garrett?

JUDGE VON KANN: Or Winters, whichever is doing it.

MR. WINTERS: I'll go second.

JUDGE VON KANN: All right.

MR. WINTERS: I wasn't aware of the consensus, but I'll go second.

JUDGE VON KANN: Okay. And then, Mr.

Dove?

MR. DOVE: That would be fine.

JUDGE VON KANN: Then, Satterfield and Music.

MR. SATTERFIELD: Yes.

JUDGE VON KANN: Okay. Well, let's break until 10 after 11:00. Thank you.

(Whereupon, the proceedings in the foregoing matter went off the record at 10:57 a.m. and went back on the record at 11:12 a.m.)

JUDGE VON KANN: I have been adding up the time estimates that people made and throwing in an hour for lunch and an hour for four more breaks, and that takes us until 6:30. So if everybody holds to their estimates exactly, we sort of just barely make it. And if the Panel doesn't screw it up by asking too many questions.

But maybe everybody would get a few brownie points for trimming a little bit. If you could come in slightly under three hours, Mr. Olaniran, that would be great, and everybody -- I don't want to shortchange anybody. This is an important witness, and people should take the time.

MR. GARRETT: Are brownie points the same as royalty points?

(Laughter.)

JUDGE VON KANN: Similar. Similar.

(Laughter.)

Okay. Let's everybody do the best we can, and we'll see if we can make it by 6:30.

JUDGE YOUNG: Adhering to the Chairman's admonition, I'll ask one question in hopefully a quick way, which is -- I'm going to ask it in a very general way, and I'm just really looking for a general answer.

I understood the equation, I understood the data, and I understood the result. I wasn't quite sure, though, how you got from the equation and the data to the result. And my question really is: is it a matter of mathematics or calculation, or was there sort of judgment calls you had to make in terms of getting from the data and the equation on the one hand to the result? Is it purely math?

THE WITNESS: This was just purely math.

I took the coefficients from the equation that I estimated.

JUDGE YOUNG: Okay. What does that mean when you say you estimated the coefficients?

THE WITNESS: So the coefficients come from -- on Table 2 in the regression analysis.

THE WITNESS: For clarification, Judge Young, are you asking how the coefficients were determined?

JUDGE YOUNG: I think that's what I'm asking, how the coefficients are calculated, yes.

THE WITNESS: So this is through standard regression analysis. What you have is you have 7,000 observations, and there's lots of variation in the royalties and lots of variation in the minutes of programming and subscriber counts, and that sort of thing.

And what this does is essentially -- well, what I did on the one -- it fits a line or a line in multi-dimensional space to that. It says, "What's the best fit we can get for this?" and it takes advantage of the variation to come up with saying that the

Program Suppliers add every -- every minute adds 15 cents to the royalties. So that's sort of what I would --

JUDGE YOUNG: So in effect, you're plotting this, you're saying?

THE WITNESS: In effect, you're plotting this. So it would be like saying the additional bedroom is $10,000. The additional minute is 15 cents.

JUDGE YOUNG: And when you use the word "estimate," you're saying that you plotted, you come out with sort of a number or a range, and the estimate is sort of picking the precise number, it's not --

THE WITNESS: So if you look on Table 2, the estimate of 15 cents, it can -- when I say I have a confidence interval of 95 percent, it would be -- that 15 cents would be plus or minus two times .17 or .017. So 3.4 cents, above and below 15 cents, would give me a confidence interval for that.

I have an estimate. The point estimate is my best guess as to what it is, or the regression's best guess, but it has a range and each of these has a range of plus or minus two standard errors.

JUDGE YOUNG: Okay. But it's essentially a mathematical calculation.

THE WITNESS: Yes, exactly.

BY MR. STEWART:

Q In effect, Dr. Rosston, you simply load the data and the variables, once you put them into the equation, into a computer and the computer runs standard regression analyses, protocols, and it comes out with those numbers that you call the estimated coefficients, correct?

A Exactly. And the standard econometric software package runs these.

JUDGE VON KANN: Okay.

JUDGE YOUNG: Okay. That was the general answer I was looking for.

JUDGE VON KANN: Okay. Mr. Olaniran?

CROSS EXAMINATION

BY MR. OLANIRAN:

Q Good afternoon, Dr. Rosston. My name is Greg Olaniran. I'm counsel for Program Suppliers.

I just want to cover real quickly a point that you mentioned earlier, and I think -- and I'm paraphrasing. You indicated that implicitly the cable operators are to some extent -- they care, to some extent, about viewing. But what they're really interested in is subscription. Is that a fair characterization of what you said?

A Yes. On these channels what they -- what they really care about on these channels is subscriptions, because they don't get any advertising revenue on these channels. On other channels where they have ad avails or whatever, I'm not exactly sure of the exact terminology, availability where they get to sell ads on certain cable channels, they care about viewing on those channels. On these channels, they don't necessarily care about viewing, except to the extent that it causes people to subscribe to the system.

Q In fact, you indicated in your testimony that the value of distant signal is in attracting and retaining subscribers, and not contributing to supplemental advertising revenue.

A Correct.

Q Okay. Now, the phrase "attracting and retaining subscribers," how did that phrase come to you?

A How did that phrase come to me?

Q Yes. How did you -- is that something you came up with on your own?

A I believe so. It's sort of a standard way of thinking about, this is the cable business.

Q You also indicate in your testimony that -- and I'm referring to the bottom of page 3 in your statement. You indicate that when people watch distant signals, they're not watching the channels where the cable operator benefits from advertising sales, right?

A Yes.

Q Now, cable operators, they don't just put on blank signals, do they? I mean, they put something on them. They put content on the signals, correct?

A Right. That's so they can get subscribers.

Q And we can agree that, to the extent that the copyrighted works that are at issue in this proceeding are embodied in those signals, cable operators -- they are packaging their contents to satisfy their subscribers, correct?

A Right. Well, they are doing it to get people to subscribe and make the most money that they can. So --

Q I think you indicated they were doing it to attract and retain subscribers, so they would also be doing it to retain subscribers as well as --

A Yes.

Q -- attract them.

A Yes, I sort of bundle the two together as making it attractive for subscribers.

Q Now, would you agree that whether a consumer wants a product is ultimately validated by whether or not -- is ultimately validated when the consumer consumes the product?

A That's true to some extent but not always. There is what economists would call option value.

Q Okay.

A That you may have the option of consuming something, but you may not actually consume it. For example, I have car insurance, and I hope not to use it to -- to actually use the product, but I have it. Often times there are -- I like being able to -- there may be the idea that certain television signals are good to have there, and I really care about having the news on my cable system, but I don't necessarily -- I don't watch CNN that often unless there's a war.

So the option of having CNN to watch is there for me, and I may like that option, but I don't necessarily watch it that often, hopefully.

Q This proceeding, I think you'd agree, is about finding out the relative marketplace value of the different program categories. Now, how would an operator know if the subscriber is being satisfied by the content that they're providing?

A The operators have -- do lots of different things to try to find out what makes their signals attractive. They get lots of feedback from their customers, and they're the ones making the decisions. And so what my analysis does is sort of says, "We are assuming they are making these decisions based on what causes people to subscribe to their systems."

Q What kind of feedback are you referring to from the customers?

A Customers say that they want certain channels or don't want -- don't care about other channels. The cable operator is making decisions about what channels it carries and not carries in order to try to attract and retain subscribers.

Q And do operators not care whether people are watching what they put on?

A In essence, the bottom line is they don't care if you watch or don't watch a specific channel, as long as you subscribe. But your decision to subscribe is in part affected by whether you want it. But the ultimate thing that the cable operator cares about is, do you subscribe or not?

Q In general, in a mature industry, do you find that -- let's assume that the cable industry is a mature industry. Would you find that a cable operator would devote more resources to attraction of subscribers over retention of subscribers?

A I don't think that they -- there is some literature about people who think that retaining --

that it's easier to retain your subscriber than to attract a new one, and there may be different costs of these things.

But in general, I think that they think of this as a -- as very similar, that attracting new subscribers or retaining their old ones from going to DBS or something, or over-the-air channels, they are fighting to -- I sort of lump the two together. I haven't thought about how they might be separated.

Q I'm not sure if I understand your answer. Let me repeat the question. Assuming that the cable industry is a mature industry, would you expect the cable operator to devote more resources to attracting subscribers or to retaining subscribers?

A If by "mature industry" you mean it's not -- do you mean it's not growing a lot?

Q By "mature," let's assume that I mean that it has a high penetration, and let's assume that the penetration has somewhat plateaued, leveled off in essence.

A So if it's not growing, then you wouldn't put a whole lot of effort into attracting new subscribers, but there are -- there is churn in the industry as well. So you're continually losing and attracting subscribers as well.

Q I didn't mean to suggest that you wouldn't be interested in attracting subscribers, that the operator wouldn't be attracting subscribers. My question was whether or not the operator would devote more attention to retention as opposed to attraction.

A I guess I would go to the point that it's what -- the efforts -- they would balance the efforts in terms of whether they had to do anything different to attract or retain subscribers, and then to see what percent -- what the magnitude to these numbers were, and whether there was actually a big difference or not in doing it.

So I don't know all the details of what the differences are between attracting a customer and retaining a customer. And by the way you've given it, the magnitudes are substantially more that they have to retain. The other question is how likely people are to leave if they're already a cable subscriber or not.

You may not have to do a lot to -- if everybody who is already a cable subscriber will stay a cable subscriber, no matter what you do, or unless you do things outrageously, then you'd probably focus more attention on getting new subscribers.

If the situation is different, you might -- so it depends a lot on the details of the situation that sort of need to be fleshed out to understand this. But in general, I think you try to please your customers and keep your customers and attract new people.

Q So your answer is you don't know.

A The answer is you need to know more information than the question you gave me, yes.

Q Now, when you say that advertising is not important, and that the cable operators don't care about advertising, that's because on a distant signal you can't insert advertising and it makes no difference, right?

A They care about advertising, just not the advertising on distant signals.

Q On distant signals, correct?

A Right.

Q Okay. Now, imagine that if you were in a free marketplace, and assume that in a free marketplace we wouldn't be talking about distant signal, we would just be talking about programming -- now, in that marketplace, wouldn't a cable operator care about advertising?

A It depends. They have some signals where they get more or less advertising. It depends on the ratio of how advertising affects subscribers. They still -- their primary revenue source is subscription revenues, and that's where they focus their attention.

Q Have you -- I'm sorry.

A That's all right. In a distant marketplace, or in a marketplace without these rules, they may or may not be able to, or may or may not want to, get advertising availabilities on them in general. I think they have them on cable networks, but the magnitude and amount of them is very different on different cable networks.

Q But you would agree, though, that in a free marketplace they would function very similar to the way cable networks function.

A Well, it may be very different than existing cable networks, because the way existing cable networks function is predicated on the distant signal marketplace being in place as well. These people know this. If you changed the distant signal marketplace, that may also change not only the free market with this, but you -- it's not a static world outside of the distant signal marketplace.

So that the way that cable networks negotiate may become very different if you -- all of us hadn't added all of these distant signals into the marketplace as well. So that you may or may not get a different marketplace than what you sort of see for cable networks right now.

Q You're saying there would be no difference, or are you saying that there would be some difference, you just don't know?

A I'm saying there probably would be a difference, but you don't -- but I don't know exactly how it would play out.

Q What do you understand the task of this

Panel to be?

A The task of this Panel is to award the royalties for the two years to the claimants on the basis of relative marketplace value.

Q Okay. Now, the regression analysis that you performed, that was your idea?

A Yes, it was.

Q Okay. You worked with Dr. Fratrik?

A I received data from Dr. Fratrik. I didn't actually -- I didn't talk about this at all to Dr. Fratrik.

Q Okay. Did you also work or have any contact with Dr. Ducey?

A No. I've never had contact with Dr. Ducey.

Q Now, when you decided to perform a regression analysis, did you have in mind that you were going to use program minutes?

A Yes. When I first started looking at this issue, I looked at Dr. Besen's study, and saw that he weighted your minutes by -- or weighted minutes by viewing, and I didn't think that was the right thing to do. So I thought the right thing to do was to use minutes.

Q And why is that?

A Because I think that in the regression analysis that I did it shows that if things are more valuable they'll get more royalties, and it shows, for example, that sports is worth 10 times as much as the others.

It doesn't need to have the viewing weights to come up with the results that seem reasonable, and that viewing can be a very different metric than actually causing changes in royalties. The viewing metric can be you may -- you may want -- things may get a very high audience, but not be worth a whole lot, because they're just a little bit more -- just a little bit more attractive to viewers than the next best alternative, but -- so they get a lot of viewing.

But if people -- but the cable operator could attract subscribers by showing the next best thing, and get nearly the same number of people. And so viewing isn't what's important, it's subscriptions, and that's why I wanted to focus not on viewing but on changes in the royalty based on how they affected the cable operators' decisions.

Q Other than the work that was done by Dr. Besen with regard to viewing, did you independently undertake a study to determine whether or not viewing could actually -- is actually a better predictor or a worse predictor of marketplace value than program minutes?

A I didn't do that, because I didn't think it was relevant, so I didn't look at it.

Q But if you didn't do that, you wouldn't actually know whether or not it was, would you? It could be relevant.

A Well, as I explained in the steps that I went through was develop the model -- figure out the question you're trying to address and develop the model that you're trying to address. Viewing wasn't, in my mind, the appropriate metric for looking at this, because the cable operators don't value viewing on distant signals. They value subscriptions.

So I didn't think that that was -- it's

sort of not an appropriate metric with which to measure it, so I didn't include it, and I don't think that -- it may by happenstance come in, but it would be odd that that would be the right way to go about it when you can't come up with a theoretical justification for setting it up that way.

Q But again, my point is if you never -- if you didn't do it, it could be the right way to go, and you might be wrong by using program minutes, but you wouldn't know unless you actually undertook a study that tested viewing minutes.

A Well, I don't think you would -- I don't think that's accurate. It's sort of -- if -- you may find that the number of -- I don't know, the number of cars that had accidents in that cable system area were closely allied with royalties.

You wouldn't believe that that was a reasonable way to do it, and I didn't model that, and I don't think there's -- but maybe it came closer to predicting it, but it doesn't make a lot of sense, and no one would believe the results. And it's not something I modeled.

And so when you -- you have to come up with the justification for what the behavior is in order to set something in your model.

Q I guess my point is, what you have is a theory about viewing. You don't have anything in practice to support that, correct?

A I didn't model viewing in sort of thinking about the incentives to the cable operator. I didn't think it was the right way to go, and I think there were justifications for saying for -- behind that, so that's not -- that -- but I did not do any empirical work based on viewing studies. That's correct.

Q Okay. Do you consider yourself an expert statistician or an expert economist, or both?

A I consider myself an expert economist who uses econometric and regression techniques.

Q Okay. And regression analysis would be a common task for someone of your expertise?

A Yes.

Q Okay. Just in general, what type of information does a regression analysis provide? Just generally speaking.

A The regression analysis provides a relationship between independent or right-hand side variables, if you -- the right-hand side variables are the explanatory variables, the independent variables, and a dependent variable. So the relationship between different variables is what you get from a regression analysis.

Q And with that you attempt to predict or project to the real world, so to speak.

A What I've done is tried to explain the relationship that exists in the data that I have, and that's --

Q Are you saying that it may or may not reflect the real world?

A No, this is the real world. This is the data that I have, and this is the behavior that happened. So this is real data, and it's real relationships that exist in the data.

Q Okay. So your model, then, attempts to simulate the real world?

A I'm not sure I understand what you're trying to at it. My model takes real world events and says, "Here's the relationship." Just like the model for the house says, "What's the relationship between prices and numbers of bedrooms, it says here's the relationship." That's what mine does. Mine says, "Here's the relationship between these -- the minutes and subscribers and channels on royalties." So it's real world data.

Q Well, it doesn't take into account all of the facts in the real world. It takes some elements of the real world and tries to project something about the real world, but my question is whether or not the result -- what results from that, in terms of what you've done in this case, is supposed to reflect the real world, given that you didn't actually study every single event in the real world.

A So let me see if I can rephrase your question in a way that I can understand it. Essentially, you're saying, did I exclude some variables from the right-hand side that explained things? Is that what you're trying to say? Are there excluded variables?

Q My question is very simple. Can we

understand your regression analysis to be giving us a sense of what the real world looks like?

A Yes.

Q Okay. Would you say that your analysis has considered all of the factors that are important for the creation of the regression model?

A I guess this is the question that I tried to paraphrase. Yes, and I -- that's -- I think I got the straightforward, simple, linear regression, does the -- the main drivers of cable royalties.

Then, what I did, one of the things also that the fixed effects regression does is it takes into account -- what it essentially does is puts a dummy variable in for each system, so that it accounts for factors that differ across systems.

So that to the extent there were excluded variables that I didn't know about, the fixed effects regression -- that were important, the fixed effects regression would account for those excluded variables that vary on a system basis.

Q Now, what factors would indicate whether a regression analysis is reliable?

A Well, the main thing is, does it perform the way you thought it would, in terms of predictions? Is it consistent with your prior view of what variables should look like and how things -- how the relationships you predict in your -- when you're setting up your model, how those things work? That's the main thing that you would look at.

Q When you say -- when you ask the question -- in the course of doing this, when you ask the question, is it consistent with your prior view, what prior view are you referring to?

A When you set up the model, do you think that subscribers will -- additional subscribers will add to royalties? Is that going to be a positive number? And is that in with the realm of -- is 76 cents within the realm of what is reasonable to expect? Do adding -- does higher income lead to higher subscription or higher royalties?

Those sorts of things, those sorts of questions that in putting them in the model you have what we call in economics a priori expectations of what the science would be.

Q So you're talking in terms of some preconceived economic theories?

A Right. When you sort of set up a model, when you -- as I said, the first step is to figure out what the question is. The second step is to set up a model. In setting up that model, you don't just throw in the kitchen sink or regressions and say, "What's going to -- I don't know what's going to happen, but I should throw in accidents that occurred within this cable system."

Well, that's not something you'd have any idea of what the sign should be, or whether it should be in the model at all. But the things that I put in are things that you would use to predict -- or things that you would use that you thought had a predictable effect on cable systems.

Some things you may, in regression analysis, put in that have possibly two different effects -- a plus and a minus. And so you wouldn't necessarily know the predicted sign in the equation, and you'd try and figure that out. But other things have predictable effects.

Q Now, in terms of the things you put in, I take it you're talking about the variables?

A Yes.

Q It would be important -- it is important, is it not, that the data input have integrity and accuracy?

A Yes. That was shown by the fact that when the data inputs changed, my Valentine's regression results changed.

Q And, for example, if one were to use a sample, such as the one used by Dr. Fratrik, that would have to be a valid sample, would it not?

A Yes, it relies on -- the estimates I have rely on the sample that he did.

Q And to the extent that he did not use a valid sample, that would have an adverse impact on your analysis?

A To the extent his sample isn't representative of -- it doesn't provide good estimates of the programming that occurred over the course of the two years, that would -- if his was off, that would affect my results, absolutely.

Q And the same would go for the underlying economic theories that are reflected in the regression model. They would also have to be accurate.

A I'm not sure that -- well, you would develop this model, and then you estimate the relationships in the data. To the extent that you get significant results and you didn't include it, that you would want to estimate something that's a reasonable economic model, yes.

Q Let me make sure I understand. My question was whether or not the preconceived economic theories that I mentioned a few seconds ago, a few minutes ago, whether those would also need to be accurate in order for the regression results to be accurate.

A Well, you might have an idea that a certain right-hand side variable has a predictive effect. You may not have thought to all the possible effects, and, therefore, the coefficient may be different than what you predicted it might be.

But it still wouldn't mean that the relationship between the two variables doesn't hold.

It still -- what the regression results does is it tells you the relationship in the data.

Q Now, on this same basis, you could exclude a variable, couldn't you, on the basis that it doesn't have a predictive effect?

A Right. Well, for example, I excluded car accidents in the cable system area.

Q You also excluded viewing, correct?

A Yes.

Q Okay. Now, what would indicate that a regression analysis is a failure?

A If it doesn't have -- if it doesn't provide the information that you want in terms of having the predicted signs, having the -- and it doesn't sort of comport with what your a priori expectations were.

Q Would a regression analysis typically indicate anything about a cause and effect relationship between the variables?

A Actually, let me -- can I go back to your previous question?

Q Sure.

A That would tell you if -- my answer to that previous question was assuming that the model that -- and what you were trying to measure was reasonable. If you had something else that wasn't directed towards the question you were trying to answer, or didn't -- wasn't set up in the right way, didn't answer the right questions, that would also be something that I think wouldn't work as well.

So now -- I'm sorry -- I lost the question that you just asked.

Q That's okay. The question was whether or not a regression analysis typically would indicate anything about a cause and effect relationship between the variables.

A The regression analysis is -- I've been trying to be pretty careful. It tells you the relationship between the variables. The model gives you the idea of what causation is. That's why you need to sort of set up a model. Rather than just plugging things in and running a regression, you sort of -- what -- the typical example that's used to explain this in econometrics classes is price on quantity.

Does price -- does high price -- or which is causing which? High prices causing low quantity, or low quantity causing high prices? And you -- or different things. You might have causation of education and income. Does low income cause low education, or does low education cause low income for kids?

There's lot of things that you need to develop, but you -- what you can do is you can develop a model that does have predicted signs and predicted causality in it. So that's why you want to develop a model that does things, rather than just running a regression where you don't know what affects what.

Q I'm sorry. I'm going to have to repeat my question, because I'm not sure if I got the answer. My question was whether or not the analysis typically would indicate a cause and effect relationship between variables? And your answer is yes or no?

A My answer is typically, yes, if you set up the model correctly.

Q Did the analysis you performed in this --

for this proceeding indicate a cause and effect relationship between variables?

A The model set -- the way I set up the model, it had the predicted things. That's why, for example, I used lagged subscribers and lagged channels was because I didn't want those to be having this endogeneity problem or causality problem. So those were used as line variables, but otherwise I think I said that the right way.

JUDGE VON KANN: Let me make sure I understand that last point. You took -- if I understood it, you took the number of subscribers at the beginning of the period --

THE WITNESS: Yes.

JUDGE VON KANN: -- and held that constant during the period.

THE WITNESS: So for each six-month period, instead of picking the other variables I had -- so the royalties were throughout the period. I only had measures of subscribers either at the beginning of the period or the end of the period. So I had two -- for each observation, I had either the beginning or the end, and I chose the beginning, because then the minutes can't affect the subscribers at the beginning.

There's no causality in the royalties affecting subscribers at the beginning of the period, or minutes or anything else affecting subscribers, because those are at the beginning of the period, so they don't change.

JUDGE VON KANN: This question is going to portray my ignorance about regression analysis. But I understand your view is that viewing is not the critical component, but rather it's whether the programming attracts subscribers. Fair enough.

I'm still having -- I'm having a little difficulty understanding how your model determines that different kinds of programming attract more subscribers if you hold the number of subscribers constant during the period you're analyzing. I don't quite understand how a regression model can tell you that.

THE WITNESS: Okay. The subscribers are used as an explanatory variable for royalties.

Royalties -- so I've got subscribers at the start of the period as one of my explanatory variables on the right-hand side to account for system size.

On the left-hand side, the dependent variable is royalties. You can decompose royalties into subscribers times monthly rate times the royalty rate. So there's three components to that.

So the minutes are explaining subscribers in the royalty section, so the fact that you get more subscribers increases royalties. Does that make --

JUDGE VON KANN: How does the model tell you that increasing sports minutes, for example, is causing a certain increase in the number of subscribers? Because if I understood it, you're holding the number of subscribers constant during the period.

THE WITNESS: Well, I'm holding the number of subscribers constant on the right-hand side of the equation. But in the royalties part, it's either that -- in the royalties part, there's the three components. And one is held constant, which is the royalty rate. The subscribers -- and the fees, the monthly rate, and the number of subscribers changes, especially the number of subscribers changes all during that six-month period.

So that's where you get the programming minutes affecting the royalties. And it changes across -- and I also have a lot of variation across different systems and across time that allows me to tease out that effect as well.

JUDGE VON KANN: So is the -- in very rough terms, and I don't think I need the technical explanation exactly, but as the composition of programming minutes is changing over this time, you are able to look at that as against what's happening to royalties?

THE WITNESS: Yes.

JUDGE VON KANN: And, therefore, determining that there is a relationship between the increase in some kind of programming minutes, which leads to an increase in subscribers, which leads to an increase in royalties, is that the idea?

THE WITNESS: Yes, or that you may have different systems that have different programming. So that's essentially, if you sort of look at it in a simple way, the way that regression analysis does this is we have 7,000 observations, so we don't need changes in any particular system, but we have changes in different systems, just like the houses are different. The houses didn't change, but the number of bedrooms changed across houses, and we were able to get that information across that.

So you do get the variation, and the programming makeup allows you to explain the changes -- there's changes in royalties and the differences in royalties and differences in the programming minutes that allows you to explain it.

JUDGE VON KANN: Okay. Go ahead, Mr. Olaniran.

BY MR. OLANIRAN:

Q I think my last question was whether or not the analysis you performed in this proceeding indicated anything about a cause and effect relationship between the variables, and your answer -- I don't recall if you answered or not.

A Because of the model, this is set up so that these things are a relationship that is -- that the number of minutes in the programming and the subscribers and other things do explain the royalties.

Q So the model does indicate a cause and effect relationship --

A Yes.

Q -- is what you're saying. And are you familiar with the term "non-least squares"?

A Non-least squares?

Q Yes.

JUDGE VON KANN: Non what squares?

THE WITNESS: Non-least. N-O-N --

JUDGE VON KANN: Least?

THE WITNESS: Yes, least squares. No.

BY MR. OLANIRAN:

Q You're not. Okay. Now, are there tests that can be --

JUDGE VON KANN: That's a shopping mall available for rent. Is that --

(Laughter.)

BY MR. OLANIRAN:

Q Are there tests that can be performed to verify whether or not a regression analysis has accomplished its purpose?

A Are there tests? There are different ways to look at it. It depends -- there are tests, for example, of the significance of the coefficients that you can see to see, are they different than zero? Do they comport with your a priori expectations? There are not sort of -- there are ways to test if you have problems, if there are tests of structural changes or different tests that you can do to look at regression.

But it's some -- for example, in my analysis, in looking at the random effects and fixed effects, there is a test to allow you to tell whether or not fixed effects are important in the regression analysis. And so I was able to do that. There's not a test that says, is this a good regression?

There's no sort of, you know, econometric machine you put things in that says, is this good? Or -- and there's also not a test that says, is fixed effects better than the ordinary least squares model that you've done?

Q No test to see if this is a good

regression or not, is that --

A There are characteristics you would look at. There's no sort of test like the test that I have for saying, is this regression coefficient significant? There is no sort of test that says this is a good regression or a bad regression. There are characteristics that you would look at in the regression, but not a -- there's no magic test that says, "This is good and this is bad."

Q And I'm testing the limits of my knowledge in your area, but would a -- would you have done, say, a scatter graph, plotted a scatter graph, for example, to test anything within the analysis?

A There are different ways you might look at the data to see, does it comport with your view of things? But what the regression analysis -- what that would do is sort of give you a two-dimensional plot of variables, and you might get the same problem we had with the houses where you don't control for all the other effects.

What the regression does is essentially gives you a scatter plot in n-dimensional space, however many variables you have, and fits it to that and gives you an idea based on the statistics how far apart are these dots from that line in n-dimensional space, and things like that. So you are implicitly doing a scatter plot, but it's with statistics, not with a drawing and eyeballs.

Q But that would tell you something about the characteristics of your analysis, would they not?

A They might tell you something. It's not necessarily -- it's -- it depends what you're trying to ascertain. I think that the statistical regression allows you to control for a lot more than a two-dimensional plot.

Q But you did not do that, correct?

A No, I did a -- did the regression analysis.

Q Now, are you familiar with the term "residuals"?

A Yes.

Q What does that mean?

A Residuals are the difference between your fitted value and the actual values. So if you had a whole bunch of data, you might fit a line through this data and say that's the best fit. And the residuals are the difference between the fitted value and the actual value at every point. Those are the residuals.

Q Okay. Now, is it a common practice in your field to test residual data after performing the regression analysis?

A I'm not sure what you mean by "to test residual data." Essentially, do you mean to see how good a fit you have, how close it is on the --

Q Yes.

A Yes, that's essentially what the -- one measure of the -- of an equation is what's called the r-squared or goodness of fit, and that's a measure of the -- how much of the variations you explain in the data.

Q Okay. And do you have an r-squared, I believe on page 19?

A Yes.

Q Okay. We'll come back to that. Are you familiar with the Durbin-Watson test?

A Yes, I am.

Q What kind of test is that?

A It's a test -- I'm trying to remember exactly which it measures, and I'm sort of blanking here for a second. What the statistic does, I believe, is a measure of heteroskedascity.

Q Great word.

(Laughter.)

JUDGE VON KANN: That's what I was thinking.

(Laughter.)

JUDGE YOUNG: We're waiting for you to explain that word.

THE WITNESS: Okay.

BY MR. OLANIRAN:

Q Could you spell it first?

A H-E-T-E-R-O-S-K-E-D-A-S-C-I-T-Y.

Q Thank you.

A There may be a C as well. Sometimes people spell it with a C instead of a K.

JUDGE YOUNG: I think you had a C on page 19.

THE WITNESS: So heteroskedascity, when

you find that -- it's probably easiest to draw that the residuals are correlated with some variable. For example, if this is -- if you had system size, and you may have your residuals getting wider as your systems get bigger. So that would be an example of heteroskedascity.

You have your residuals get -- you still have -- your best line is still straight to the same place, but your residuals are wider as your system size gets wider.

JUDGE YOUNG: Meaning greater --

THE WITNESS: Greater difference, yes. So, yes, the residuals are greater, so that would be an example of heteroskedascity.

BY MR. OLANIRAN:

Q And the Durbin-Watson test measures that? I'm not sure how you --

A There's a Durbin-Watson statistic that measures the -- that measures whether there's indications of heteroskedascity or not.

Q And did you perform the Durbin-Watson test?

A I believe that that's one of the results that gets routinely printed out in state of regression analysis, since we looked at that. And that's why we would have done the heteroskedascity corrected errors.

Q Are you familiar with the term "collinearity"?

A Collinearity?

Q Collinearity.

A Collinearity. Yes.

Q And what is that?

A Collinearity means that you have two variables that essentially measure the same thing. For example, you wouldn't want to put in hours of programming and minutes of programming, because one is essentially a linear transform of the other. So those things would be perfectly collinear.

JUDGE YOUNG: So you don't want to count the same variable twice.

THE WITNESS: Right. You would -- what would end up happening in your regression analysis is things would blow up, because you would have -- the computer will go, well, I don't know how much to put on the hours side, and I don't know how much to put on the minutes side, because I'm trying to explain -- use the exact same thing to explain, and the computer would spit back -- say this is ridiculous and tell you it doesn't work. And it would exclude one of them or it would not run it, depending upon the program.

BY MR. OLANIRAN:

Q Now, would you test a model for collinearity?

A Well, one of the ways to test collinearity is because when things are collinear what happens also, if they're not perfectly collinear, if they're very close to collinear, you get -- what happens is the model becomes very imprecise. The estimates become -- what happens is the estimates -- the standard errors blow up, and they get very large.

And so testing for collinearity would sort of look at your standard errors. Are they -- do you get big standard errors where you didn't expect them? And that's something that would occur when you had collinearity or what we call multi-collinearity, because you can have linear combinations or two or three variables adding up to another, or something like that.

So you would be worried about that if you had very large standard errors where you didn't expect them.

Q Now, did you test for collinearity with respect to your analysis?

A Well, I did by looking at the standard errors to see if they had -- they were much larger than expected. I was able to estimate these things relatively precisely. So I didn't expect that there was a lot of collinearity.

Q And that's the way you tested for it, just by looking at the standard errors, or is there some sort of formal --

A There are --

Q -- step by step --

A -- step-by-step tests as well, but you only do those when you find -- when you suspect that there is collinearity, so you would go through those when you suspect that there's a problem with collinearity. You might go through and do some more tests on it, but --

Q So you just basically eyeball the standard deviations to see if --

A Well, a little bit more sophisticated than that, but you don't necessarily need to do all of these tests if there's not collinearity present.

Q You stated that you looked at random effects. Random effects. Could you tell us briefly again, what does the random effects analysis tell you about a regression model?

A So what the random effects model does is it tells you -- so I know that I've got this -- this system is in place multiple times. So what I'm doing is I'm getting -- it tells me that I'm getting less variation in the data than I thought by having -- by having four -- instead of having four different systems, I have the same system four times.

So what it does is it says -- it tells the econometric package, take account of this fact in computing your estimates and your standard errors, and it tends to give you broader standard errors, wider standard errors, because you have less confidence in your estimates, but also different standard errors because of the way it estimates the program.

Q Now, have the work papers you used in looking at random effects been produced with the discovery materials that were requested of your counsel?

A I believe so.

Q Okay. Are you familiar with the term "step-wise regression"?

A Yes, I am.

Q And what is that?

A I believe -- this is something -- I have never done step-wise regression, but I believe what you do in step-wise in sort of adding -- or maybe I have -- what I believe the term refers to is adding variables step by step, but I'm not -- I haven't used that term.

I've done that to check things in the past, but I haven't -- I don't necessarily know if that's exactly what you mean by the term.

Q I think you just answered my next question. Since you never did it before, you would not have done it in this case?

A No, I said I didn't use the term. I have actually looked at what the effects of -- if that's what you mean by step-wise regression, do you add and subtract specific variables, and I did do some of that to try to figure out what was going on with the variables here, to make sure that things didn't blow up when added subscribers or other things that -- or local channels, and to see what was happening.

Q I guess -- let me back up a second. Are you saying that you did or you did not? I'm not clear.

A Now, I was -- I misspoke earlier.

Q Okay.

A I wasn't I wasn't necessarily clear on what the term "step-wise regression" was, but then in -- and I never used -- I've never used the term "step-wise regression," but I have done what I think step-wise regression is, which is adding variables one by one to see how that affects things.

Q Okay. Now, what is specification error?

A Specification error is when you have a regression that is misspecified. You don't have a system set up in the way that it should be. So that it gives you -- it's not set up according to a model, you may have omitted variables, that sort of thing.

Q Did you test for that?

A What I did was look to see what -- I put in the model that I believed was appropriate, and one of the ways to test for a specification error that I was able to do was a fixed effects regression. A fixed effects regression sort of says anything that you think that might vary on a system-by-system basis that's not included in this ordinary least squares regression is accounted for in the fixed effects regression.

So in some sense, I did test for, and do, an alternative with a very different specification that accounted for the possibility of omitted variables that vary on a system basis.

Q Did you look at transformations of your variable?

A When you say "transformations" --

Q Well, let me back up. What do you

understand by the term "transformation"?

A I would understand that as taking minutes and dividing them by 60 and getting hours. That would be a transformation of my variable.

Q And did you do that with respect to your analysis?

A No.

Q Okay.

A It wouldn't make any difference.

Q Okay.

A It would just -- if I divided the minutes by 60, got hours, my coefficients would be divided by 60.

Q Are you familiar with the term "interactions"?

A Yes.

Q And what does the term -- what do you understand by that term?

A In a regression context, interactions would be that you could interact two variables. For example, if you look at my regression analysis, you might think that you could interact, multiply two variables times each other to try and figure out what the effect is when they are -- when you have Mexican programming on a partially distant signal.

Q Now, is that some sort of test of your analysis? Would that be a type of test?

A That would be a different specification.

Q And is that something you looked at with respect to your analysis here?

A We thought about it, but we thought that this was -- that it wasn't the appropriate way to go about modeling it. But we did think about interaction effects.

Q Okay. On page 7 of your statement, you talk about control factors. And briefly, what are those? What are control factors?

A These are things that are probably more fully explained on page 11.

Q Okay.

A That I used -- I think it's page 11, yes, in equation 2. So the control -- equation 2 and equation 1 are the same, except that from beta 9 through beta 17 --

Q Okay.

A -- I've detailed the control factors that I used.

Q Okay. You've identified the control factors, but what do they do? What exactly do they do within the context of your analysis? What is the purpose of a control factor?

A The purpose is to control for other factors that might be affecting the royalty payment, other than the programming minutes, to try and model what else affects royalty payments.

Q So if we look at the equation on page 11, subscribers would be control factors?

A Yes.

Q And income would be a control factor?

A Yes.

Q Did you try revenues as a control factor?

A No. And that would be almost -- because revenue is an endogenous variable. Essentially, revenues is on the left-hand side of the equation.

Q Okay.

A The revenues are -- the royalties are the revenues times the royalty rate. So I'd have a great fit for my regression. I'd be able to explain everything, but I'd be explaining it by the same thing on the right-hand side, so it doesn't make sense to put revenues on the left-hand side. I'm sorry, on the right-hand side, excuse me.

Q Now, before you ultimately arrived at this control factor, did you try any other variables as control factors?

A I'm trying to recall if we did. I can't recall any others that we tried.

Q Did you consider the DSE values as a control factor?

A Actually, you're right, we did think about whether or not we should put the actual sum of the DSEs on the right-hand side, and thought that that wasn't the right way to go.

Q And why did you reach that conclusion?

A Because we have a lot of the information from the DSE values already incorporated in the sum of the total minutes from the different categories, so that we would be, one, risking this collinearity problem, and, two, we wanted -- and so that was the main reason, but we also didn't think that it would have that much an effect in that.

Q How would the information about DSEs be reflected in the sum of the program minutes?

A Well, the more DSEs you have, the more minutes you have. So in our calculation, the fact that an independent station gets all of its minutes counted is reflected as a 1 DSE, and the fact that a network affiliate has all of its network programming blocked out, it counts as a quarter DSE in ours.

So we have -- we use the minutes, which reflects more what the minutes of syndicated programming -- sorry, the minutes of the different categories reflects more accurately what they're actually buying than the DSE reflects what they're buying.

Q In effect, there's a direct relationship between DSEs and program minutes?

A Not -- it's not complete, because -- and that's one of the other reasons, now that you've reminded me, of why we didn't want to use it and we thought minutes was better, was because, for example, on network stations it's not 75 percent of the programming that is blocked out all the time.

And so the program minutes gives you a much more accurate view of what they're actually buying by buying a specific channel than the DSE value does.

Q And what do you rely on for the assertion that the more DSEs you have the more minutes you have?

A Well, it's just the fact that you're adding more channels, and I can see in my data that when you add another channel, the number of minutes goes up. It doesn't go down.

Q So then if -- assuming that -- let's assume that there are two systems, system A and system B. And system A carried a PBS station, and system B carried WGN. Are you with me?

A Just a second. Yes.

Q And let's also assume that system A, which carries the PBS station, has a total of 100 minutes. And let's assume that system B, which carries WGN, has a total of 50 minutes -- 50 compensable. Can we conclude from that that system A -- I mean, system A has more DSEs than system B?

A No, because of the -- the minutes are there, but the DSEs are -- what I did -- and in this case PBS is a special case at one DSE -- or, sorry, .25 DSEs, even though they have -- we have 100 percent of their programs. But it is the case that they are pretty much a separate channel, so that that effect is taken account of in the regression.

The DSEs -- again, if you put the DSEs on the side, what you're doing is you're not -- what I say is you're getting the -- what you end up getting from the minutes is this is what these guys are buying. They're not buying DSE. They're buying the minutes, and that's why you want to have -- that's what attracts subscribers, not DSEs.

Q If I understand your answer correctly, and please correct me if I'm wrong, that you're saying that higher minutes don't necessarily indicate a higher DSE, more DSE.

A Right. Because in this case it may be the case that you had -- and it would probably be clearer if you got 100 and 100, that the DSE count for PBS is .25, and the DSE count for WGN is 1. So it doesn't necessarily count that way, and that's another reason to try and figure out what they're buying on the right-hand side as opposed to the DSE.

Q And I had asked the question whether or not you considered DSE as a control factor, and you indicated that you did not because you thought there was a relationship -- a very close relationship -- direct relationship between DSEs and program minutes. And if I understand your most recent answer, you are saying that it's not necessarily the case.

A Well, there is a relationship between the two, and they are correlated very much. They're not perfectly correlated, but there is a correlation. And, second, that the more appropriate one of the two -- if you have to decide between the two, the more appropriate one is to look at the minutes because that's what people are buying.

Q Now, what criteria do you apply in selecting the variables -- the various variables that you used in your analysis?

A I used those variables that I thought were reasonably related to the cable operators' decision to carry the -- to carry the distant signals, and how they -- how these other variables -- so that would be the minutes variables, and then the other variables that would affect the royalty payments, the control factors essentially that would affect royalty -- every -- all of the other things that would affect royalty payments.

Q I think you've identified -- I think you're talking about the variables that you did use. My question, however, goes to, what criteria did you use to select program minutes, for example?

A Well, I thought that was the -- for selecting program minutes was that this was a variable that was reasonably related to what these cable system operators are showing, and what their -- and so -- and that in turn relates to consumers' decisions to subscribe, and the operator's decision to price things.

So that's why I thought that minutes would be an appropriate way to look at it, to figure out how additional minutes of programming on one category would affect the royalties.

Q What knowledge base were you drawing from in concluding that program minutes were actually an important variable?

A Well, I probably started by looking at what I -- I wish I could say, well, I'm brilliant and I knew the answer, but I started by looking at what Dr. Besen did initially in the last proceeding where he did his regression analysis, and he started with minutes and then weighted them by viewer shares, and I thought that what he had done in terms of trying to relate the actual purchases in the program to the -- in the program marketplace to the royalties was the right way to go about explaining real world behavior.

But I didn't think that the weighting was appropriate, so that sort of took me back to minutes, which I thought was an appropriate way to do it. So the knowledge base was probably started with Dr. Besen.

Q So you looked at Dr. Besen, who used viewing, and you didn't like that for reasons that you consider appropriate, and you've decided on program minutes. It's still not clear to me what is the criteria. Other than discounting what Dr. Besen did, what is it that led you to the conclusion that program minutes were appropriate for the analysis. Did you use any texts or economic models, for example?

A No, I sort of looked at this is what people are buying. This is -- I don't believe there's any text that tells you appropriate -- I've never seen a model outside of past proceedings of this Panel that looks at this question directly.

But this is sort of the idea of Hedonic analysis is look at the characteristics of what you're buying. You're buying programs, and how many minutes of different types of programming can shed light on the royalties, and that's how you figure out the value of it. So that's how I went about it.

Q Have you ever done any work that relates directly to compulsory licensing, other than what you've done in this proceeding?

A Have I ever done any work relating to compulsory licensing? I believe I did do some literature review and stuff for someone in the past who was looking at this question.

Q And who would that be?

A Steve Wildman.

Q Okay. And what exactly did you do in that capacity?

A That was about 12 years ago, so I have -- and I only worked a little bit of time on it, so I don't really have a strong recollection of what I did.

Q Would you have done anything in relationship to viewing or program minutes in that engagement?

A I don't recall what we did. I worked on it for maybe a day 12 years ago under his -- just gathered some information for him, and I don't recall what it was.

Q And aside from that engagement with I guess Dr. Wildman, have you done anything else that relates to distant signals or distant retransmitted TV programming?

A I've done a very tiny bit of work that has incredibly peripheral relation to just looking at the total royalty payments from a cable system, but not estimating anything like this.

Q But it's not something that's connected -- is it connected to distant signals, or no?

A It does -- well, the -- part of it has -- the copyright fees that they pay are a function of something that -- an issue that I'm looking at. But that's just sort of the total fees that they pay.

Q Okay.

A It's not an analysis of those fees at all.

Q Okay. Have you done any work that relates to program valuation on cable networks?

A I have not tried to value anything on program networks. I've done some work looking at program access rules that implicitly looks at values of programs.

Q What exactly -- can you give us a little bit more detail about that?

A Sure. I forget exactly the statute it's under, but there are program access rules -- I believe it's called program access rules. I'm not exactly positive of the legal terminology of it, but essentially this was a case -- the FCC was looking at whether satellite companies should get access to the same programs that cable companies should get. And so it implicitly looked at the value of these programs that were -- the cable networks that were available to the cable companies and DBS.

Q Are you talking about the value of the cable networks or the value of the programs on the networks?

A Well, I didn't look -- I didn't actually do a valuation study. I said implicitly I took into account the values of these things in terms of subscriber -- cable -- DBS's decision to want to carry the system or the channel. So I wasn't looking at the specific program valuations, no.

Q Okay. You also would not have done anything on distant signals relating to program valuation, then.

A No.

Q Okay. Do you have any experience that relates specifically to program choices on cable systems?

A Some of the work in thinking about the FCC cable rate regulation involved thinking about how cable operators would respond to the rate regulation and what their incentives were for programming channels and choosing channels, adding tiers or adding channels, so there is -- that's the most extent that I can think of right now that I have for cable operators making programming decisions.

Q Now, how long ago was that experience?

A That was in the '94/'95 timeframe.

Q Okay.

A Actually, and then some of the work on open video systems actually had to do with programming decisions as well. That would have been more recently, '96/'97 timeframe.

Q And with regards to the program access rules, the projects you were referring to, how long ago was that?

A That would have been probably 1998/'99.

Q Okay. Now, with regards to the program choices, you said you may have done something on a cable system. What about with respect to distant signals specifically?

A This was all in the context of the FCC stuff where they were trying to figure out what channels people would add and not add. So presumably it added in that case -- I know that I didn't think specifically about distant signals, but it was about what signals would they add that were attractive to subscribers.

Q So this --

A About what incentives they would have to improve the quality of their signal -- I'm sorry, lineup, not signal. Sorry.

Q Are you done with your answer?

A Yes.

Q Sorry about that. So you haven't done anything that relates specifically to programming choices on distant signals, right?

A No.

Q Have you done any work relating to cable subscriber behavior with respect to programming?

A I have -- in my courses and in my work as a researcher, I've read lots of studies of cable subscriber behavior, cable systems, and done work in that area that way, and in my work at the FCC was aware of what was going on in terms of the literature on cable system demand.

This is a very active area in industrial organization, and regulation is looking at -- because we had this, at least for economists, a great experiment with cable rate regulation that came in and out and in and out, and so there's lots of data available. And so economists tend to write about things where the light is.

Q So the extent of your familiarity with cable subscriber behavior is based on the things that you've read over the years?

A Primarily, yes, through being a student of the literature.

Q When did you leave the FCC?

A I left the FCC in 1997.

Q Okay. Have you done any work related to cable subscriber attitude on cable networks, on cable in general?

A No, I have not.

Q Have you done any work related to viewing patterns?

A I don't believe I have.

Q It is correct, then, that you would not have undertaken a regression analysis of cable system program choices in any context, correct?

A Can you repeat that?

Q You have never undertaken a regression analysis -- outside of the work you've done in this proceeding, you have never undertaken a regression analysis looking at program choices on cable systems?

A That's correct.

Q And the same would apply with respect to program valuation, you would not have done a regression analysis analyzing valuation -- relating to program valuation on cable systems?

A I don't believe I have, no.

Q Okay. Have you undertaken a regression analysis with respect to cable royalty payments outside of what you've done in this proceeding?

A No.

Q Now, in your testimony at page 1, I think it's the second line from the bottom, you indicated that you studied aspects of the cable television industry while at the FCC and since that time. Are you referring to the things you mentioned a few moments ago with regard to reading literature and things of that nature?

A I've done that, and I've also done some consulting projects that have involved the cable industry as well.

Q Okay.

A So I've been aware of what's going on in cable.

Q What kinds of consulting projects?

A I did a -- I've done a project evaluating what I would call cable and multi-channel video programming, looking at the aspects of acquisition of DBS slots or DBS satellite slots, both looking at when the cable -- there is a group of cable companies that wanted to buy a satellite slot.

And then, I also looked at the EchoStar/DirecTV merger, and then I have also done work on horizontal ownership limits on cable, what percentage of the country that they could cover. I looked at that and a regulatory analysis.

And I also recently was asked by the San Francisco Telecommunications Commission to look at the aspect of overbilled competition in cable in San Francisco.

Q Now, you identified two projects in San Francisco. One was the latter one, and the one before that. How long ago were these projects?

A The San Francisco cable one was in January or February of this year.

Q Okay.

A The projects that I've done for the National Cable Television Association were within the last couple of years. I think a year ago or two years ago. I can't remember the exact dates on these things. And then the satellite ones were -- one was 1998, and the other -- 1997/'98, and the other was more recently, in the last two years on EchoStar/DirecTV.

JUDGE VON KANN: Mr. Olaniran, just for your planning, let me tell you we would be sort of normally taking a break probably about now, but that's going to kind of push lunch back pretty late. So I propose we go until 12:45, if everybody can make another 15 minutes, and then break for lunch. Does that work out for you?

MR. OLANIRAN: That's fine. It's okay with us.

JUDGE VON KANN: Is that all right? Can you go another 15 minutes?

THE WITNESS: As long as he can wrap his questioning up by then.

(Laughter.)

JUDGE VON KANN: Okay. There was -- a little shock of fear went through me when you said, "Now, we'd like to start with page 1."

(Laughter.)

After about an hour and 15 minutes of questioning, but --

(Laughter.)

-- that said, go ahead.

JUDGE GULIN: Before we start again, Dr. Rosston, I want to go back just for a moment to your point about the appropriate metric is minutes, because that's what's being purchased is minutes. And you decided not to weight it by ratings or viewership or anything else.

I guess implicitly, then, that means that you treated a minute of Gilligan's Island at 3:00 a.m. the same as a movie at -- or a sporting event at 9:00 p.m., correct?

THE WITNESS: Well, that's sort of what I get over -- the estimates are the average value for each -- the average -- it's going to sound complicated for a second. The average marginal value, but let's just leave off the "marginal" for a second, the average value across these times.

So there may be highly valued episodes of Gilligan's Island at 2:00 in the afternoon when kids come home from school, and low value ones at 3:00 in the morning, and sort of the whole time period then averages out to having that coefficient. I think it was 15 cents.

Whereas sports has -- I have the average value of motorcycle racing at 2:00 in the morning versus NFL football, or whatever -- actually, I don't think NFL football counts, but I could be wrong. I don't know the exact details.

JUDGE GULIN: I'm not sure motorcycle racing does either.

THE WITNESS: Okay.

(Laughter.)

These things -- you get the average value, and it sort of shows that sports is substantially more valuable than the other things. And it gives you the average value over the course of these 84 days as opposed to looking at different things.

If you then wanted to sort of divide it up among the group, within the groups, this is dividing it among the groups, then you would have to sort of look at, well, how much of this comes from the 2:00 in the morning stuff versus how much comes from the primetime stuff, and you'd want to look -- I believe this Phase II -- that you'd have to look at the components of the categories.

But right now this gives me the average value of cost in the category and makes it comparable across categories. And so all the timing weighting stuff is included implicitly in my analysis.

JUDGE YOUNG: Across the category, in terms of time of the day, as well as over the period, the accounting period.

THE WITNESS: Right.

JUDGE YOUNG: Sorry I interrupted you.

JUDGE GULIN: No, that's okay. I was finished.

THE WITNESS: Just around this -- unfortunately for you, across all four accounting periods, but this is why we kind of put -- the time dummies account for some of that as well. And from what I understand, I think that the pies are roughly the same as well, the pot of money in the two years.

BY MR. OLANIRAN:

Q Is it accurate to describe your primary area of expertise as cable telephony?

A Since very few people have cable telephones, I don't think that that's my primary area of expertise.

Q Well, cable telephony competition. I'm sorry.

A I would say sort of competition issues in telecommunications. Most of what I have written has been -- my research has focused on telephone service and spectrum issues, wireless issues. But then I've done other analysis probably more heavily weighted on my consulting side towards cable.

Q Okay.

A But not as much on the publications side.

Q So the fact that -- your body of expertise with respect to what informs your study in this case does not consist of a knowledge of program choices on distant signals, correct?

A Right. I have not done a study of distant signals before, no.

Q And does not consist of the knowledge of program valuation, whether it's distant signal or cable, correct?

A Right. I haven't done those kinds of studies before, no.

Q So when you conclude -- when you -- when I asked you what criteria you used to, for example, determine that program minutes were a preferred variable over, say, viewing minutes, now you are basing that on the body of knowledge that does not include a knowledge of distant signal with respect to program choices or program valuation, right?

A No.

Q Okay.

A I've read stuff and studied this issue. It's not -- it's not anything I had done before this.

Q Now, just to be clear, the dependent variable in this model is the royalties, correct?

A Yes.

Q And the independent variables are everything else on the right side?

A Yes.

Q Okay. And that would be those variables listed on page 11?

A Correct. I believe -- I'll get to page 11, but I'm pretty sure that's the right page. Yes.

Q Okay. Now, when you describe a variable as dummy coded --

A I'm sorry. What?

Q When you describe a variable as dummy coded, or a dummy variable --

A Okay.

Q Okay. I'm sorry. What do you mean by that?

A That it takes the value of zero or one. For example, all of the observations that are up here would have a one -- I'm sorry. These would be excluded. All the ones that were 1998-2 would have that variable of 1998-2 as a one. All of the other observations would have 1998-2 as a zero, and then the 1999-1 would have a one in the variable.

So if I had the variable, the dummy variable, 1998-2, I'd have zeroes all the way down here, and then ones. And then, for the other observations that are in 1998 as well.

Q What does that mean? What impact does the dummy variable have on your analysis?

A It allows you to see if there's controls for changes that may occur across time, over time, that are not incorporated otherwise by the other variables that sort of -- a time trend has been -- something has been changing over time that doesn't change over these other variables. For example, inflation might be included in that.

Q On page 5 of your testimony, under Roman numeral III, I think it's -- one, two, three, four -- the sentence beginning on the fourth line, you indicate that economists use regression analysis to separate out individual impacts of several factors on a key variable. Now, what is the key variable in this study?

A This is -- that would be the dependent variable, which is royalties.

Q Okay. And you did indicate earlier that your model was a linear model, right?

A Yes.

Q Okay. Now, what does robustness of a model tell us?

A Robustness of a model -- that if -- I'm not sure what -- how -- what you mean in terms of --

Q What is "robustness"? Maybe I should just ask that. What do you understand by the term?

A That it's -- that it holds up if you have changes in -- that the model would explain things maybe if you were to do the sample as one of the two years as opposed to both years, for example.

That may be something that might -- you might be able to claim that it's robust if it's insensitive to that change, or to the sample -- if Dr. Fratrik went and did another sample of a different 84 days, would I be able to replicate my results? Would my results be still -- still come up the same?

Q And you indicated that you did that in that -- in this case.

A Okay. Robustness test. I'm sorry. I was looking at -- thinking about something different. In this case, I did robustness tests. Are they sensitive to the change in specification, was what I called "robustness test" in this case. That's the problem having to think on my feet, or my seat as it is.

That those are sort of tests of whether changing the economic specification changes the results substantially. So what I was focused on there was, does this cause me to come up with -- am I being

-- can I look at it in a different way with the random and fixed effects, and be assured that I'm coming up with a lower bound for the estimate for the commercial TV providers.

Q Okay. Going back, though, to what you mentioned about retesting Dr. Fratrik's sample, if you perform a robustness test -- first of all, how do you measure robustness, I guess? How would you measure robustness in that case?

A Well, in the first case where I did it, it was sort of, does this help me provide a lower bound? If the -- if you got substantially different results from redoing your sample of 84 days or something different, then you'd say, well, what's going on? Why is it different? Then, you'd try and figure that out, but it would be looking at your regression analysis.

Not sitting here and thinking right now, I haven't sort of thought about how you might check to -- I'd have to think through and figure out exactly how you might check to see if they are substantially similar or not.

Q "They" meaning --

A The results from the two -- from the regression if you had two different -- if you got Dr. Fratrik to go back and do another 84 days.

Q Okay. Whether or not he would come up with the same results.

A Well, his would presumably different, but he has confidence intervals in his thing, which are relatively narrow confidence intervals. And so because of these relatively narrow confidence intervals, my expectation is that his minutes relationships would be relatively the same and that -- within those confidence intervals.

And that would affect -- just as his changed results, there would be some changes in his presumably by doing a different sample, but they would be relatively close. And, therefore, I would expect that my results would be relatively close as well.

JUDGE YOUNG: Holding everything else constant, everything other than the program minutes.

THE WITNESS: Right. Yes, not -- well, presumably I'm not going to go reestimate the number of subscribers or something like that. Those numbers

I'm taking as given as well, yes. Exactly right.

BY MR. OLANIRAN:

Q And, again, the regression analysis you performed here would fit into the definition of a robust model, right?

A Well, I think that, yes, because the tests of how good a model I have were the other tests of the random and fixed effects models, sort of providing the lower bound, making sure that this provided a lower bound.

Q Okay. You used Status software?

A Stata.

Q Stata. I'm sorry. That's S-T-A-T-A. What version did you use? Do you recall?

A I don't recall. It's either version 6 or version 7. I don't recall the answer to that. My guess, it may be version -- Stata is up to version 8 by now. But I think at the time it was version 7.

Q Okay.

A But I'd have to check on that.

MR. OLANIRAN: Your Honor, this is probably a good stopping point before I get into another --

JUDGE YOUNG: You had mentioned earlier that one of the things you did to -- and I'm going to use lay terms, but I think to check on the -- what you would consider the validity of the results was to see how the results conformed to -- I think you used the word "a priori expectations."

THE WITNESS: Right.

JUDGE YOUNG: And you used this example, well, if we were to -- what's our expectation with respect to subscriber rates and how that affects the royalties, and this is consistent with that. What kind of a priori expectations did you have with respect to the results of the marginal value of a minute for each of the categories? Did you have an expectation that sports would be worth roughly around that or --

THE WITNESS: I didn't have a priori expectations for the magnitudes of the numbers for the different categories. But my expectation was that sports minutes are more valuable than other minutes in terms of attracting subscribers. And so I would expect sports to be more valuable than the others.

In terms of the relative magnitude, I wasn't sure what they would be. But the fact that sports is 10 times more valuable per minute than the others doesn't shock me at all. And that these others are -- the other magnitudes don't seem surprising either.

JUDGE YOUNG: And why do you say that? I guess that's what I want to probe in terms of --

THE WITNESS: Well, I guess I didn't actually go and try and figure out -- multiply these through times -- but sort of looked at the relative values, and everything I read in the previous things about sports being much more valuable and my own personal preferences, that seems to indicate that that's why I subscribe to cable, because they have sports on it. And I think a lot of people do, and they target it.

MR. GARRETT: Are you available to testify for --

(Laughter.)

THE WITNESS: There's a lot of local

channels in my area.

(Laughter.)

MR. OLANIRAN: And they are very good.

(Laughter.)

JUDGE YOUNG: But, I mean, in terms of even the relative values between, say, sports and PBS, and that seems to be fairly extreme as well.

THE WITNESS: Yes. I didn't -- the relative value of sports and PBS seems extreme to you?

JUDGE YOUNG: I don't know if it's extreme to me.

THE WITNESS: Right. Oh, okay.

JUDGE YOUNG: It seems --

THE WITNESS: It's quite large. Sports is by far and away the most valuable one, and the others are within, you know, a relatively small range compared to where sports stands compared to the rest of them.

JUDGE YOUNG: Okay.

JUDGE VON KANN: All right. We'll break for an hour.

Mr. Olaniran, you've used an hour and a

half. I hope you can finish up after lunch in an hour and a half, and that will keep us on track.

MR. OLANIRAN: I think I will finish on time.

JUDGE VON KANN: Okay, good. 1:45.

(Whereupon, at 12:46 p.m., the proceedings in the foregoing matter went off the record for a lunch break.)

JUDGE von KANN: Any party have any objection to the Music Claimants' direct case? Going once, going twice? Unopposed, okay. Mr. Olaniran.

JUDGE GULIN: Actually, before we get started, I wanted to make one real quick comment on the what Mr. Garrett expressed, that I recognize that NFL is compensable 2.5.

MR. DOVE: Including the half-time show.

(Laughter.)

MR. GARRETT: For what it's worth.

JUDGE von KANN: That's one of the questions we'll have to answer.

JUDGE YOUNG: Now that we know the Witness is a sports man, do we want to ask him if he watches half-time shows?

(Laughter.)

Or do we just want to leave it good enough as is? You got the Commissioner to say that.

JUDGE von KANN: Okay. Mr. Olaniran.

CROSS EXAMINATION (CONT'D)

BY MR. OLANIRAN:

Q We were discussing before the break, Dr. Rosston, about your exclusion of the DSE value as a variable.

A Yes.

Q Do you recall that? Could you have added other variables to your model?

A I'm sure you can add other variables, add anything you want to it to try to estimate it, but what you want to do is to formulate a model that makes sense in explaining what you want to look at.

Q Would it be possible to add a variable and still have the regression results unaffected?

A Sure. You could add a variable that had nothing to do with it. Car crashes in the cable system area, presumably, my guess, would have nothing to do with it and would have a zero coefficient, and the rest of the results would remain unchanged.

Q So then putting in more variables than you need wouldn't affect the measurement of the effect of the important variables; is that right?

A Well, it depends on -- you asked first could you add a variable and it would have no effect, and that's true. You could also have variables that might have effects on the ones you're interested in and there's colinearity with them or if there's other correlations between the variables you include and the other independent variables. So that can affect your regression estimates.

Q Okay. I'd like to have marked for identification PS 16-X -- 18-X.

(Whereupon, the above-referred to document was marked as PS Exhibit No. 18-X for identification.)

Q Dr. Rosston, have you had an opportunity to review that?

A Yes. I've looked at it.

Q Okay. Do you recognize the document?

A I don't recognize the document, but I have an idea of what the data is.

Q Okay. If you look at the top lefthand corner up at -- they've got it marked as PS 18-X, do you see a file name after the "Microsoft Excel?"

A Yes. It says, "master_dataset_revised [Read Only]."

Q Okay. Do you recognize the file name?

A I think so. I don't recall the exact names of the files, but that seems reasonable to believe that that was the master dataset that we used for the regression.

Q I represent to you that that is -- that the file name is the file -- is one of the file names that was contained in the CD-Roms that were produced to us by counsel as underlying your testimony. And the Exhibit PS 18-X is an excerpt from that file except sorted for specific information. But we haven't done anything to the exhibit -- I represent to you that we have done nothing to the exhibit other than resort the data.

A Okay.

Q Okay?

A She knows that there also are hidden columns as well, so there's additional data.

Q That's correct.

JUDGE von KANN: Hidden column.

THE WITNESS: So if you look at the top of the Column A and B, C and D are missing, so they're hidden. In Excel, you can just collapse them to have zero column width. And then also it goes from J to S.

PARTICIPANT: That's for presentation purposes.

THE WITNESS: Right. So they're not showing other columns of data, so there's a lot more data in the fields than you're looking at.

BY MR. OLANIRAN:

Q And I have to correct myself there. If you look at Column J on that, that's actually a calculated column. It's a royalty-applied column. Do you see that?

A Yes.

Q And that column is -- I'd like to

represent to you that the royalty total column is a calculated column.

JUDGE von KANN: Royalty total or royalty applied?

MR. OLANIRAN: I mean, I'm sorry, the royalty-applied column is a --

JUDGE von KANN: J.

MR. OLANIRAN: Column J is a calculated column which we actually did. What I wanted to run through with you, though, let's go through the line -- I'd like to move this exhibit for impeachment purposes only.

JUDGE von KANN: Why don't we wait till the end of the examination and find out what use was made of it.

BY MR. OLANIRAN:

Q Do you see Line 1490 under the accounting period 1991-1?

A Yes.

Q And do you see where it says -- the line that says, "Richmond?"

A Yes.

Q Okay. Can you tell me how many distant signals was carried by that particular system?

A I can see that the construct DSE, which is the measure that we constructed, gives you 3.25, but I can't tell you from this data how many signals there were that make it up. There are various different combinations that you could have to get to 3.25.

Q What is the construct DSE?

A Construct DSE is explained in Appendix B of my report, and what construct DSE is it takes all the distant signals, because what Cable Data Corporation does is reports partially distant signals as 0.36 of a DSE if one DSE signal covered 36 percent of the subscribers. So what we did was we said, no, that shouldn't be a 0.36, that should be a 1. And we converted those to make a construct DSE. And according to the table in Footnote 4, which we used rather than using the data from Cable Data Corporation based on what they called the DSE, we did a constructed DSE based on the characteristics of the signal.

Q Again, what was the objective you were trying to accomplish by using a construct DSE?

A To figure out exactly what the real DSE was, because that's the number that affects the royalty. If you had an additional DSE that came in, what affects how much you pay on the next DSE is the number of DSEs you have, not the number of partially distant DSEs. So it's based on the DSEs or the construct DSEs that would affect the royalty rate.

Q And how did you utilize the construct DSE in your analysis?

A How we used the construct DSE in our analysis was to use this as a screen. For example, you see on Line 1487, that's the second line down, the construct DSE there is zero. That means that the Las Vegas system had no distant signals, and so that was excluded from our analysis. The others, if you look down, we also used -- so we would exclude the zeros from our analysis, and that's where we did the construct DSE.

Q Okay. If you look at Line 1490 and Line 1491, do you see the Line 1491, that's the Bakersfield station?

A Bakersfield system, yes.

Q And how many construct DSEs does that have?

A That has one.

Q Okay. Are you familiar with royalty rates?

A The distant signal royalty rates, yes.

Q And what are those?

A Those are the rates that are charged for the carriage of distant signals.

Q Okay. And in the context of royalties, how do the rates work in connection with DSEs?

A The first one -- I don't know the exact number but looking at this it looks like the first DSE is at 0.89 percent, or 0.893 percent.

Q Okay.

A That would be my guess from this, but I don't have the precise number. And then the additional DSEs that you have are generally charged at lower rates with the exception of 3.75 DSEs.

Q Now, you had indicated -- we discussed earlier about the relationship between DSEs and program minutes. Do you recall that?

A Yes.

Q And you indicated that there was a relationship between program minutes and DSE. Do you recall that?

A Yes. Not a perfect relationship but there is a relationship.

Q Correct. Not a perfect relationship. And I had inquired as to why you did not use DSE as a variable, and you indicated it was because of the close relationship between DSEs and program minutes. Do you recall that?

A And also because they're purchasing the minutes, not purchasing DSE.

Q And in rejecting DSE as a variable, are you in effect saying that it is not a good predictor of royalties?

A No. I'm saying that this -- that the ability to use the minutes gets you a much better ability to answer the question at hand. If you just ran a regression with DSEs on the righthand side and royalties on the lefthand side, you would get a coefficient on DSEs and that would tell you nothing about the relative marketplace value of the different programming types. It would tell you about the value of DSEs, and so you wouldn't be able to answer the question at hand at all. So it's a model of something, but it's not a model of something that's of interest to this question.

Q Would you agree, though, that DSEs do in fact predict to a certain extent the royalty values for station types and -- do you agree with that?

A Sure. The more DSEs you have, and that's why, for example, in my regression analysis I have the idea of the 3.75 DSE is in, that that's a higher rate DSE, and the partially distant one is a lower rate DSE, and those things are there to correct for things that are not part of the standard DSEs. But, yes, you would -- but DSEs are related to royalties, because that's how you paid them, but it doesn't help you answer the question here.

Q Now let's look at again Line 1490 and 1491 on the exhibit marked as PS 18-X. And if you go to Column G, you notice that for the Richmond system that there are 2,620 subscribers; do you see that?

A Yes.

Q And for the Bakersfield system, there are 6,005 subscribers; do you see that?

A Yes.

Q And you go to Column H, which has the receipts, which I understand are gross receipts, correct?

A Yes.

Q And for both systems the gross receipts are almost identical; do you see that?

A Yes.

Q Okay. Then you go to Column I, and for the Richmond system, the royalties are $8,414; do you see that?

A Yes.

Q And then for the Bakersfield system, the royalties are $3,479.

A Yes.

Q Okay. And when you compare the two systems, the system with the lesser number of subscribers actually is obligated to pay more royalties. Would you agree with that?

A Yes. They're paying a slightly higher royalty total. Let me make sure I say that correctly. Sorry. They're not paying -- yes, I'm sorry, I was looking at the wrong column. Yes. So the royalty total in Column I is higher for the Richmond system than for the Bakersfield system, yes.

Q Okay. And looking at that, what do you attribute that to?

A Well --

Q Strike that. Let me go back. If you look at Column S, you notice that the construct DSE, which I believe you described as the real DSE; is that right? A true DSE.

A A construct DSE. I'll keep it at that.

Q Okay. Let's keep it at a construct DSE for the Richmond system is 3.25; do you see that?

A Yes.

Q And for the Bakersfield system it's 1.

A Correct.

Q Would you agree then that what's driving the royalties in this particular case is the construct

DSE rate, the royalty rate that's applied for the construct DSE?

A Well, you've got to figure out why are they buying the DSE, and they're buying the DSE for the programming minutes. So it's the programming minutes driving the DSE, so you're sort of taking it just up a level of generality. Yes, they're buying more DSE because there's quality minutes that they want that they think helps them get subscribers. That's why they buy the DSE. That's why the DSE is related to the royalties is because they buy the programs that attract the subscribers that allow them to pay -- no, that allow them to charge for their services, and they then get receipts, and that's why it's all related, absolutely.

Q I'm actually not talking about program minutes, I'm asking a question about DSEs. And my question is whether or not in this example we just looked at, the Richmond system, which is paying more than twice the royalties than the Bakersfield system which has three times as many subscribers, and my question to you was whether or not in this particular example it's the construct DSE that's driving the royalties that's paid by the system?

A I think that's the question I answered was the construct DSE is greater because they're buying more minutes of programming, they're buying more channels, which they want to buy. So, yes, it looks like that, but that doesn't get the underlying relationship that sort of says that the DSE is an indicator that they're buying attractive minutes, and that's what they want to buy. So, yes, I agree with you that the DSE under the Richmond one is higher than the other one, and the royalty rates are higher, but that doesn't mean that the DSE is driving it. It may mean that the thing that's driving the DSE is driving it as an underlying factor.

Q Is it your contention then that the Richmond system has more minutes than the Bakersfield system?

A No. It has more valuable minutes, by valuable in terms of attracting subscribers for their particular system. And one of the problems is it's hard to look at a particular system. You get a lot of the disturbances in an individual system looking at a specific example, so I wouldn't be surprised if there were more or less minutes based on what we had on the Richmond system.

For example, it could be the case that the Richmond system has a 3.25 highly valuable DSE and the Bakersfield system has four 0.25 systems on it, or four 0.25 channels on it, so that the Bakersfield system may have a lot more minutes, but maybe those minutes are a lot less valuable. So you can't just look at the DSEs and then say that the minutes are there. There's a relationship, but it's not necessarily one to one. It's the value of the minutes that drive the subscribers.

Q And how exactly did you determine that there is a relationship?

A Well, this is the -- how did I determine there's a relationship between what?

Q Between minutes and DSEs.

A Well, I didn't actually determine that. I looked at that and thought -- I didn't actually go and test it or anything else. As I said, we thought about DSEs but didn't end up thinking that that was as appropriate as looking at what people are buying, so we didn't actually test DSEs in this or do anything like that.

Q My question is how did you determine that there's a relationship between DSEs and program minutes? I believe you said -- led to the conclusion to exclude DSEs as a variable.

A Well, it was sort of -- we thought about what was there and what we were measuring, and the DSEs -- as you add DSEs you're adding channels, that there tend to be more DSEs. The majority of channels that are carried on the system are 1.0 DSEs. They're carried as distant signals in our sample. So that sort of indicates that if you had a distant signals and the majority of them are 1.0, that you're going to get more minutes as well.

Q But I don't believe you have answered my question with respect to the connection between DSEs and program minutes. Your statement was there is a connection between DSEs and program minutes. You told me, you articulated the effect of DSEs. My question is where do you -- what is it that you're relying on for the assertion that there is a connection between DSE values that are used for the calculations of royalties and minutes?

A This was looking at the formulas and seeing how it worked and looking at the fact that an additional DSE is a station and it has minutes on it. And when you add a station you add minutes. That was sort of the basis for thinking of it that way, although there are different -- and that most of them are I think it's something around the order of 55 percent are 1.0 DSEs. So if you're adding -- the majority of times you add a station you add a 1.0 DSE, you're going to be adding -- minutes are going to go up at the same time DSEs go up.

MR. OLANIRAN: Your Honor, I'd like to move the admission of PS 18-X.

JUDGE von KANN: For impeachment purposes?

MR. OLANIRAN: For impeachment purposes.

MR. STEWART: Your Honor, I have no objection, but I want to make clear that we view this as an illustrative hypothetical. We have the disk here, and we've been unable to replicate the lines in this exhibit. Furthermore, there's been additional data added by counsel. But without premise, we have no objection.

JUDGE von KANN: It will be received for impeachment only.

(Whereupon, the above-referred to document, previously marked as PS Exhibit No. 18-X for identification, was admitted into evidence.)

BY MR. OLANIRAN:

Q I just want to clarify something with respect to the lagged subscriber numbers. You indicated that you used the subscriber numbers at the beginning of the period rather than at the end of the period. How did you use that concept? I'm not sure I understood.

A Excuse me?

Q The lagged subscribers.

A Right. So we used the -- in the regression, instead of having the subscribers at the end of the period, we used the subscribers from the end of the previous period, which is identical to the subscribers at the beginning of the period.

Q So for 98-2 accounting period, what subscriber numbers would you have used?

A The subscribers from the end of 98-1.

JUDGE von KANN: The statement of account is a report of the number of subscribers at the beginning and end of each period?

THE WITNESS: I believe it's only the end of the period.

JUDGE von KANN: End of the period, okay.

THE WITNESS: So we have to go back to CDC and get the 1997-2 cable system data that gave us the subscribers.

JUDGE von KANN: Okay.

BY MR. OLANIRAN:

Q For 1998-1, what subscriber numbers would you have used?

A The subscriber numbers from 1997-2.

Q Okay. Now, are you aware of when WTBS became a cable network?

A I believe they became a cable network at the start of 1998.

Q Okay. Now, the subscriber numbers that you used for 1998-1 would that number have included the subscriber numbers for WTBS?

A This included the subscriber numbers for the cable systems, so to the extent that cable systems carried WTBS at the end of 1997, that includes -- that's the subscriber numbers. But my thought was -- yes, that's right.

Q Now, given that WTBS was no longer a distant signal at the beginning of 1998, did you make any adjustment in your analysis to account for that?

A Not in the subscriber figures. But to the extent that WTBS was carried on all these systems, consumers have no idea whether it's carried as a distant signal or whether it's carried as a cable network as long as it's in the same tiers. So they don't know -- to that extent, it wouldn't be a difference in the subscriber numbers.

And the other thing is that this subscriber figure is to give you an idea of the general size of the systems. It's to correct for the size of the system, so it's the independent variable. The dependent variable on subscribers during the course of the period when WTBS changed that's included implicitly in the royalties, so that remember the royalties are the subscribers times the rate, times the monthly price for cable service, times the rate. So subscribers that would be affected by this change by WTBS would be affected and included in the regression analysis.

Q So you didn't think it was necessary to make any adjustments for the fact that WTBS was no longer a distant signal at the beginning of 1998.

A No, it wasn't necessary for what I was doing. It didn't affect the analysis at all.

Q Okay. Would you please turn to Page 11 of your testimony? And I know you covered quite a bit of this earlier today, so I'm going to be very -- I'm going to try to be as brief as possible. Now, if you look at the top of the page where you have the formula, and right at the every end of the formula -- of the equation, rather, after beta 17 1999-2, there's a little squiggly --

A Epsilon.

Q -- symbol -- Epsilon, thank you. What does that represent?

A That is a standard econometric term. It's the error term in the regression equation. Since you know that you're estimating something you don't have, the error is essentially the fact that you can't -- not all your observations on a line. If everything were on a simple line, then that error term Epsilon would be zero.

Q And why is it included in this analysis?

A Well, this is -- it actually doesn't get estimated in the actual -- it's the residual or the -- that is the measure of what we don't explain. So it's the leftover part. So if you had a perfect relationship, you could estimate a function where you had hours on the lefthand side and minutes on the righthand side. You'd estimate this regression equation, and you would get hours equals 60 times minutes plus no error. The fact that you have some variance in the righthand side and it doesn't measure exactly precisely, you have an error term that you add in to the equation or you specify your equation with an error term.

Q Are you familiar with the term, "Sigma?"

A Sigma?

Q Yes.

A Yes. It's a Greek letter.

Q In the context of econometrics.

A It can be used a lot of different ways.

Q Used in relation to standard deviation.

A Yes.

Q Okay. You're familiar with it?

A Yes.

Q What assumptions about Sigma do you make in this model?

A The standard assumption is that the error terms are normally distributed, and that assumption actually would be that there's sort of a standard normal distribution of the error terms. What we've done is corrected those for heteroskedascity, because the error terms -- its normal distribution gets bigger as you go up in system size. So we've made that assumption.

Q Now always going to be the same or does it change depending on what else is going on with respect to the model?

A Generally, this is a standard econometric assumption that you'd make. There are other models. You might estimate other maximum likelihood estimation or other estimation techniques that you might have, that you might assume, make different assumptions if you were addressing different questions.

Q Would you please turn to Page 17 of your testimony? I think you indicated -- you explained a good portion of this this morning. Now, if we took, for example, under the column labeled "Variables," do you see that?

A Yes.

Q And we look at minutes of program suppliers programming, and you have 24,317 as a mean. That would be the average of what?

A The average number of minutes on a cable system in the sample.

Q And those are the -- if you go down to where it says, "average household income in a designated market area," do you see that?

A Yes.

Q And, again, that would be the average household income in a designated market area within the accounting period --

A Yes.

Q -- studied?

A Yes.

Q Okay. And what would the count of local channels represent?

A The number of local channels -- the average number of local channels that were carried on the cable systems. So the average cable system had 5.35 local channels.

Q And back for a second to the minutes for all of the -- for each -- for the average minutes indicated for each program category, and that would also be the average minutes per accounting period.

A Yes.

Q Okay. And remind us again, what does the standard deviation represent?

A It represents -- it's a measure of variance, how much could these things vary.

Q When you say, "these things," you're referring to?

A The variables that you're measuring, what's their degree of variance?

Q Could we turn to Page 23 -- I'm sorry, Page 19 of your testimony? Are you there?

A Yes.

Q Tell me, what do you mean by explanatory variables? Is that dependent or independent variables?

A That means the independent variables are the explanatory variables. They're the ones that explain the dependent variables.

JUDGE YOUNG: They're on the right side.

THE WITNESS: Yes. Well, except in this table where they're on the left.

JUDGE YOUNG: Right. In your equation.

THE WITNESS: In the equation they're the righthand side variables, yes.

BY MR. OLANIRAN:

Q And when you go down on the righthand side, you have the term at the top of the column, "ordinary least squares." What does that mean?

A That's the regression technique that I used, which was the ordinary least squares. The one that minimizes the square of the distant to the square of the residuals is what ordinary least squares regression does.

Q Okay. And just looking at the -- the data on the righthand side represent the coefficient, correct?

A Well, represents coefficients and standards errors.

Q I'm sorry, and standard error. I want to focus on coefficient. Now, how do you define the coefficient again? What is the number?

A So probably easiest to explain. Again, the 0.152 means that if you add an additional minute of program suppliers programming holding everything else constant, you would increase the royalties by 15.2 cents.

Q Let's go down to almost at the bottom of the page, just below the line where it says, "r squared 0.702."

A Yes.

Q What does that mean?

A The r squared is what some term a measure of -- it's the percentage of the variation in the dependent variable that you explain from your regression. So this would be explaining 70 percent of the variation in the dependent variable. R squared ranges from zero to one. So explaining everything in my hours/minutes example would give you an r squared of one. Explaining nothing would give you an r squared of zero. And sort of sometimes people look at this as a measure of goodness and fit, and r squared is actually -- the 0.7 measure is actually relatively high in terms of r squareds for regression analysis.

Q So your regression analysis explains 70 percent of what's going on with respect to royalties. Is that an accurate way of --

A That this regression equation explains 70 percent of the variation in --

Q Of the variation.

A Yes.

JUDGE YOUNG: And that's given to you by the computer after it does its calculation?

THE WITNESS: Yes.

JUDGE von KANN: And what does that mean, that the other 30 percent is total mystery?

THE WITNESS: That's the Epsilon. It's other things going on.

JUDGE GULIN: Is there a standard among statisticians as to -- you said that's a high number. What is --

THE WITNESS: They range, and I've seen lots of good published journal articles with r squareds of 0.1, of very low explanations, and others that were horrible articles with high r squareds. Because it's only one of a vast number of things. I think most econometricians would agree it's something you look at but it's not something you focus on. What you really want to focus on is the coefficients that you're looking at, making sure that they're reasonable and fit and are precisely measured. You can have a very low r squared but still have a good degree of confidence in your coefficient on something. What r squared tells you is sort of what you explain and don't explain.

BY MR. OLANIRAN:

Q What percentage of the variation in royalty minutes is accounted for by the various minutes of different programming types?

A I imagine -- sort of how much of this is explained by the minutes versus how much is explained by other stuff?

Q Correct.

A I haven't tried to determine that. It's the whole system working together and I'm not sure -- I haven't done that, so I can't tell you that answer to that question.

Q Would the program minutes explain most of the r squared?

A Well, there are other variables that are significant as well. For example, the numbers of subscribers is a very significant variable as well, and I don't think you should -- it's -- I don't think you should run this without putting in the variables that are important to the model. I don't know how -- I haven't done anything to try and figure out what contributes what explanatory power.

Q Is there something that you could have done to test that?

A I'm not sure I understand why someone would want to do that in terms of -- and it depends on how you construct this. You could do a regression where you drop each observation individually and see what does your r squared go down by, but, as I said, we don't -- as an economist you don't focus necessarily on r squared, so in trying to figure out what each one contributes you could do it that way. I don't necessarily think that's a good thing to do, but one could if you wanted to try to figure out what does it contribute that way. I'm not sure it would tell you whole lot.

Q So you're saying that there is a way to do that.

A Well, there's a way to do what you want to do. I'm not sure it's a way to do anything that tells you any information, but there is a way to do -- yes, you can do what I described, sure.

JUDGE YOUNG: I'm not sure I understood the answer to this question. Are you saying there is -- when you say 70 percent is a high r squared rate, are you saying that's generally within the field, if you have something at that level, 70 percent is considered good, or you're saying -- you're making the judgment given the other checks you have that it's a good one?

THE WITNESS: This was sort of more of an offhand comment about lots of articles I read and things like that. Seventy percent would be a relatively high r squared in econometric regression analysis, that most of them don't explain 70 percent of what's going on.

JUDGE YOUNG: Okay. So you're saying in terms of your own review of other regression analyses in other situations most of the r squareds are not as high?

THE WITNESS: Yes. But I want to stress that that's not what I -- this is high but it doesn't give me a lot of -- it doesn't give me to conclude, hey, this is the right model because the r squared is high. I don't sort of base my analysis based on what the r squared said. It's something that a lot of people focus on, but I don't think most econometricians would focus on that, looking at the significance of the variables and that they have the signs that you expect and that sort of thing. So it is high, yes, and it's high compared to sort of -- in the field if you sort of were to take 100 econometrics' articles at random, do a sample of articles and figure it out, you'd probably get substantially lower than 0.7.

BY MR. OLANIRAN:

Q If we accept your assertion that it's a high r squared and accept also your assertion that you have considered all of the important variables, it would seem then that if you added another variable, the r squared should not change much. Is that --

A Well, every time you add another variable your r squared will go up. That's sort of by definition -- it will go up if you add more variables. That doesn't mean it's the right thing to do.

Q You're saying every time you add a variable the r squared will go up?

A Yes. Because think about it this way: The r squared measures -- what you can do is add another variable. If you add a coefficient of zero, you would have exactly the same regression you had before, so you'd measure exactly the same amount of the -- you'd have exactly the same residual. But you can get extra information from this additional variable, so you may be able to explain a little bit more. So any time you add a variable to the regression, the r squared will go up, but that doesn't --

JUDGE YOUNG: Even if you add car accidents?

THE WITNESS: Yes. It wouldn't go up a lot but it would go up. It won't go down.

JUDGE YOUNG: How does that make that work? What's the conceivable connection with the car accidents?

THE WITNESS: It won't go down is more the precise answer to your question. It won't go down.

It may not go up, but it's definitely not going to go down.

JUDGE YOUNG: Because it will have either a zero effect --

THE WITNESS: A zero effect or a positive effect. There could be some correlation between, I don't know, people --

JUDGE YOUNG: People with car accidents are --

THE WITNESS: More teenagers in the area who push their family to subscribe to cable TV and also get into car accidents more. So you'd be -- instead of measuring -- what you should be putting -- if that were the story, you'd want to put teenagers population, not car accidents, in, because that pushes -- so you'd be putting in a variable that you don't think has any relationship but it may because there's more teenagers in the area, and they may push cable TV.

JUDGE YOUNG: More car accidents means people at home watching TV?

THE WITNESS: Yes.

JUDGE YOUNG: Maybe they're reading books.

THE WITNESS: Or they're rushing home to watch TV.

BY MR. OLANIRAN:

Q Would the coefficients change, though, if you added another variable? And, again, back to accepting your assertion that you have considered, essentially, the most important factors, would anything -- would your coefficients change if you added another variable?

A Well, that depends on a couple of things. One is if the variable has anything to do -- is useful, and, two, is if it's colinear with the ones that are already there. If it's colinear with the ones -- somehow colinear with the ones that are already there, even if it's -- it depends on how, what we would say, correlated with the ones that are there, the righthand side variables. It might affect the estimates of the righthand side variables if you added something that was correlated with the righthand side variables. It can change those coefficients as well, and it may not add to the goodness of your model, but it may change the coefficients. So it may cause problems with your model as opposed to adding benefit to your model by adding things depending upon what you add. You need to be careful about what you add and how you do it.

Q I need you to help me understand this. We're assuming that we have a collection of the most important variables that are necessary for this analysis, and I think we established earlier that you could add a variable that wouldn't have any effect if it didn't essentially mean anything to what you're trying to study. You could add a variable and there would be zero effect on the regression results. Now, my question was whether if you added another variable and let's accept that the r squared would go up but shouldn't it be the case, though, that once you have essentially the best collection of variables, there really shouldn't be anything else out there that would dramatically change your regression results.

A Let me try and address that in two ways. One is if you added something that was, as I said, correlated with the righthand side variables, it may not help you explain the dependent variable at all, but it may change the coefficients because it's related to these other things. For example, if you added hours of programming instead of minutes of programming, you'd have very different -- you might get very different coefficients as a result or something that's close but not quite hours, not quite a 60 to 1 relationship or a precise relationship but close to a relationship. Commercial minutes or something like minutes of commercials on these stations, they're not precise but they're close. That could change your regression estimates a lot but not add a whole lot more information.

The second is what I tried to do was to say, well, what if there were things that varied that I didn't include, and I worried about this, and that's why I did the fixed effect regression. And the fixed effects sort of says we've got things that may vary by system that we didn't include and we didn't account for or couldn't account for. And the fixed effects regression puts in these other variables that will account for these factors that vary by system so that in some sense what I'm doing with the fixed effects regression is doing exactly what you say is look at what happens if you add other variables that you didn't think as to how important they were what happens with those.

Q Speaking of fixed effects, the fixed effects that you tested for, was that with regard to excluded systems also?

A When I ran the fixed effects regression it was on the same sample that I had for the -- that I used -- it was for the same sample of systems that I had for the ordinary least squares. When you say "excluded systems" I wasn't clear what you meant.

Q Turn to Page 2 of your testimony, please. Now, at the bottom of that page, it's, I guess, the third paragraph, the one that starts out with, "Cable systems." Do you see that?

A Yes.

Q You state that cable systems try to maximize their profits by selling bundles of programming to their subscribers. Do you see that?

A Yes.

Q Now, isn't it true, though, that in general cable operators are trying to maximize revenue per subscriber?

A No. They're trying to maximize profits. Maximizing revenue per subscriber could cost them a lot more money.

Q They're trying to maximize profit per subscriber.

A No.

Q They're not?

A They're trying to maximize profits, not profits per subscriber.

Q They're trying to maximize profits. So would they have been -- in 1998 and 1999, would you accept that they would have been trying to maximize profits through other revenue sources, right?

A Well, they would have tried to maximize profits from everything they sell, obviously, or could sell.

Q And that would include sources such as new revenue sources, I guess, such as digital cable. Let me strike that. Let me go back. Would you agree that between 1992 and the 1998-99 period cable systems increased their service offering quite a bit?

A Yes.

Q Okay. And keeping that in mind, it would also be true that for 1998 and 1999 digital cable, for example, would have been one of the offerings they would have been trying to get subscribers to subscribe to.

A They started. My impression was digital cable wasn't that big at that point, but they were trying to get them to subscribe to packages of systems, absolutely.

Q But it was a new offering that occurred relatively -- that increased in occurrence between '92 and '98.

A Right. It was zero in '92.

Q Okay.

A It was something in '98, yes.

Q And pay-per-view would fall in that category too in terms of the increase in the offerings by cable operators.

A I think so. I'm not sure it increased, but I know that it was definitely there in '98 and '99. I'm not sure how prevalent it was in '92.

Q Okay. What about cable modem service?

A Cable modem service was offered in some areas in 1998 and '99.

Q And in fact in '98 and '99 also there were -- cable operators were interested in getting subscribers to subscribe -- well, strike that. They were concerned about losing subscribers to DBS.

A I believe so, yes.

Q So would they also have been concerned with a slowdown in subscriber growth in 1998 and 1999?

A Yes. I mean they were concerned about getting subscribers and keeping subscribers, yes.

Q So when you say that cable systems were trying to maximize their profits by selling bundles of programming to their subscribers, they were actually offering more than just programming, were they not?

A Right. They do have other sources of revenue. The cable modem service is the primary non-programming thing that they have, but they also have advertising as well.

Q And they were packaging this and trying to sell these to subscribers too, were they not?

A Packaging -- sorry?

Q Well, they were offering their services along with program services to subscribers.

A My understanding is that up until very recently, within the last three months or so, for example, cable modem service was not at all a part of the package. It was a separate service.

Q What about in '98 and '99?

A My impression was that the first time that someone started bundling it was Comcast started charging a premium for cable modem service if you didn't subscribe to the cable service as well, to their cable service. I know this because I'm a Comcast customer and they've told me that if I subscribe to cable service, I get it for $45 a month, and if I don't, it's $59 a month. So they're bundling it, but they hadn't been bundling it previously, and I was under the impression that there was virtually no one who was making a separate deal that required you to get any price break till you subscribed. I could be wrong but that's my impression.

Q But you're not sure.

A Right.

Q Okay. Now, did you analyze any of this facts as to see how they might have affected royalty payments?

A Well, this is the -- to the extent that any of these alternative services get an increase because the cable operator carries a specific type of distant signal would increase the cable operator's willingness to pay for that distant signal. And that would be reflected on my data and would come through. So to the extent that there are these alternative sources of revenue, for example, if one believed that distant signals led to more people subscribing to cable modems, then they would pick the programming that would make that attractive. So my estimates would take into account the total value to the cable system, because what I'm looking at I'm observing the cable system operator's decision when purchasing. Well, if these things are important to the cable system operator, then the cable system takes them into account when making a purchasing decision.

Q If I understand your answer, you didn't specifically analyze the impact of all of these different operators, but you assumed that that particular phenomenon is somehow accounted for in your analysis, correct?

A I didn't need to specifically include it, because the cable is operator is making that decision. Just like you said, they're thinking about these other things, I agree. And to the extent they are, these things are incorporated in the purchase decisions they make.

JUDGE GULIN: For example, if a cable operator was after a certain demographic in order to sell some of these other services, that would be reflected in the type of program they may purchase.

THE WITNESS: Right. Exactly.

BY MR. OLANIRAN:

Q Now, on Page 6 of your testimony, the ever so popular house example. Now, using your house illustration, your regression analysis would tell us, for example, how much a bathroom would add to the value of a house; is that correct?

A If that were one of the things that were included as a righthand side variable, yes.

Q Okay. And if a house had a second bathroom, presumably the regression analysis would also tell us how much that second bathroom would add to the value of your house, correct?

A Yes.

Q And, as well, if we were to add a third and a fourth bathroom, right?

A Yes.

Q Now, would you expect the second bathroom to add as much value as the first bathroom?

A It depends on the number of people you have in the house.

PARTICIPANT: You'd probably at least need it for one bathroom.

THE WITNESS: Exactly. The first one adds a lot of value.

(Laughter.)

So given that, generally, you believe that there's what we call diminishing margin of utility.

As you add more of something, you get less utility out of it, absolutely.

BY MR. OLANIRAN:

Q So that it would be reasonable to expect that at some point each additional bathroom would add incrementally less to the value of the house than the previous bathroom.

A Yes.

Q Now, if we wanted to determine how much all four bathrooms -- let's assume that four bathrooms were -- we now have four bathrooms, and we wanted to determine how much all four bathrooms add to the value of the house. Wouldn't we add up how much each bathroom added to the value of the house to get a cumulative impact?

A Well, there's a couple ways you can do that. You could either add up all four or you could figure out what's the -- over my sample what's the average value of a bathroom and multiply it by four. You could either add one, two, three, four or you could find out what the average value is and then multiply it by four if you're trying to find out what the total value of bathrooms is. If you're trying to get the total value of bathrooms if you had four-bathroom houses.

Q Now, if we took the last -- the value of the last bathroom and multiplied by four -- the value added by the last bathroom and multiply by four, that would be understating, however, the total value of the bathrooms, would it not?

A Well, that's probably where you're having something where this analogy breaks down a little bit, because what the regression analysis that I've done sort of gives you the marginal value which is the implicit market price. What you're trying to find is the market price of any good is the marginal value of it. It could be that you're willing to pay $50,000 for a car and he's willing to pay $30,000 and he's willing to pay $20,000 for a car, and the person's willing to sell it for $20,000. It may be worth more to you guys, but the market price is determined at the margin, and that's what the regression analysis that I've done is determines sort of what I would call the average marginal value, and that's why you would take what I was doing -- the regression analysis would give you the average marginal value of the minutes of the stations, and that's why it gives you sort of the market price that you want to look at as opposed to looking at just the value of that. So the marginal value is the value of the last minute that sold that was willing to be bought or sold, and that's what the regression analysis tells you.

Q So if we were to add the value -- if we were to take the value added by the last bathroom and multiply that by four, that would underestimate the total -- the value added by all four bathrooms, would it not?

A Well, the value added as opposed to the marketplace price. If the value of the fourth bathroom that someone buys is equal to the price -- someone may be willing to pay a whole lot for that first bathroom and by the fourth bathroom they're just willing to pay what the market price of a fourth bathroom is and that's the market price of bathrooms. Well, they get consumer surplus or extra value from those first three bathrooms, but the marketplace price is determined at the margin, and that's what the value of the fourth one is. And so you would be getting the correct marketplace valuation from multiplying the fourth -- the estimate you get for the value of the fourth bathroom, because that's the marketplace valuation.

Q The marketplace valuation would be the value added by the last bathroom or is it just the value of the last bathroom added?

A The last bathroom added. I mean there's five, six, seven, eight that no one adds. So you know when it's sort of the valuation at the margin.

Q But I just want to be clear. We're saying that the value added by the last bathroom is just the value added by the last bathroom. It doesn't necessarily mean the marketplace value. Or are you saying that it does?

A The marketplace value is the price. You can sort of think about there is a downward sloping demand curve, and people are willing to pay, but if you have -- if this is your demand curve and this is the supply, well, these people are willing to pay all this amount, but the market price is determined right there at the margin, and so that's where you want to look, and that's what the regression analysis allows you to look at is what's the value at the margin.

JUDGE von KANN: What do you mean by "at the margin?"

THE WITNESS: For the last one sold is sort of the market price, where the -- this would not be the marginal unit right here. This is the marginal unit right there, and that's the price of that marginal unit and the value of that marginal unit. These guys up here get a deal, because they're willing to pay more. He's willing to pay $50,000 for this car, but he only has to pay $20,000 for the car, so he gets a deal, and that's where you find the marketplace value of it is from the marginal unit, the last unit, the units the price of which where you get that sale.

BY MR. OLANIRAN:

Q You mentioned a moment ago the concept of diminished marginal utility. Is that the concept you just described?

A No.

Q Describe that for us, please.
A That being?
Q Diminished marginal utility.
A Diminishing marginal utility.
Q Right.
A So you may care about your first car at $50,000, but your second car is only worth $20,000 and your third car is worth $10,000 and your fourth car is worth nothing because you've got no garage space and you can get tickets for parking it on the street.
Q Now, wouldn't that concept apply to the concept of the bathrooms? As you indicated, each bathroom adds incrementally less value to the total value of the house; is that not true?
A That's what we said, yes.
Q Okay. Now, does this concept of diminishing marginal utility apply to your analysis, your regression analysis?
A What I observed are the actual transactions that take place, and so I know the value that -- the place at which they value them above. I don't know what happens below where they purchase, but

I know what they're willing to purchase for the given price and the prices of the royalties. So I see sort of what their marginal willingness to pay is for this. That's what the regression analysis puts out is what we call the shadow price of this, of the marginal price.

Q So are you saying that diminishing marginal utility applies or that it does not?

A My guess would be that you'd have -- it's not really something that you generally think about in terms of doing these regression analysis. My guess is that the first few minutes of sports programming or commercial TV or anything are worth more than the last ones, but what we get is the average marginal rate, so we do take this into account. But it's sort of all implicit in the way you do your model. I don't think that diminishing marginal utility is something you necessarily need to explicitly consider in this.

Q You don't need to explicitly consider it, but does it apply?

A Sure, but it doesn't affect the results.

Q Could you please turn to Page 8 of your testimony? The last sentence on the first paragraph, do you see that?

A Yes.

Q Could you read that for us, please?

A "These betas give an estimate of the implicit price paid by a cable system when it adds an additional minute of the different categories of programming and form an important basis for our estimate of the allocation of royalties among the various categories."

Q What do you mean by that?

A That these are the implicit price that people are paying, that if they add another minute of programming of one category, their royalty rates would go up or subtracting off their royalty rates would go down. So that's the implicit price they're paying for that marginal minute, which is the one that determines what the price is and what the value is.

Q It's true then that the coefficients specifically measure the value of the last -- I'll repeat that. Does that mean then that the coefficients specifically measure the value of the last or marginal minute of programming?

A Yes. They value the marginal minute, absolutely.

Q If the number of minutes for each program category were reduced by half, for example, and holding all other things equal, would you expect the coefficient to change?

A If everything else stayed the same and all the minutes were reduced in half, the coefficients would double.

JUDGE von KANN: Let me ask you about the sentence preceding the one Mr. Olaniran just asked about and you speak about, what is that, beta 2, I guess, or beta -- yes. Represents an estimate of the extent to which royalties increase when the amount of sports programming carried by cable system and distant signals increases by one minute, assuming everything else is held constant. What went through my head at the moment is if you've got 24 hours of TV blocked out, it can't all remain constant, because adding a minute to sports means taking a minute away from somebody else. How does that factor?

THE WITNESS: Well, there's a couple of different things. One is this is sort of -- as you say, this is what they pay. Maybe it's subtracting a minute off. It's adding a minute or subtracting, so you could subtract a minute and have blank is another way of thinking about it that may be less constraining in terms of thinking about it. The other is that some of these are -- you are -- this is sort of a construct in economics or econometrics that allows you to think about things even when they don't necessarily work that way in practice. This holds constant the other factors, but you can, for example, add a channel or add one minute on another channel. So that's some way you might think about that as well.

JUDGE von KANN: I don't want to get too far, but is it possible that -- and maybe your model includes all this -- that the result is different when if you add a minute of sports and take a minute off of "I Love Lucy" reruns versus you add a minute of sports and take it off of PBS, because there's some blend -- a lot of people would be willing to give up a minute of -- a little bit of this to get some more sports, but they'd be less willing to give up PBS or to give up something else. So that the combination it's not just what you add, it's also what you take away, it's the mix. I'm not saying this very well.

THE WITNESS: No, I understand what you're trying to say, and I've not thought about how this take away might occur or whatever. So, I'm sorry, I can't give you a satisfactory answer on that. It's probably easier to think about the take away in the -- how much that last minute bought cost you --

JUDGE von KANN: Okay.

THE WITNESS: -- may be an easier way to think about it.

BY MR. OLANIRAN:

Q I think your response -- I asked the question what would happen if the minutes for reduced, and all things equal you indicated that the coefficient would increase; is that correct?

A If you held everything else constant, basically it's a linear transform of the minutes, so, yes.

Q On Page 8 of your testimony, the second paragraph, looking at the second sentence, do you see that, multiplying this implicit price?

A Sorry. Oh, sorry. I was looking at the first paragraph. Yes.

Q Okay. Can you read that into the record for us, please?

A "Multiplying this implicit price by the quantity of that type of programming leads to a measure with which we can then determine the relative contribution to the value of distant signals and use these relative contributions to assign shares of the royalty pool for each type of programming."

Q Now, are you attempting to determine the total value for each category by this calculation?

A I'm attempting to calculate the relative values of each type of programming.

Q And when you add up all of the values, it would add up to the total value.

A No, because I have a lot of -- as I say, I believe it's -- where is that? There's a footnote where I explain that these numbers don't add up because there are a lot of other things that I'm controlling for in the regression, so I wouldn't necessarily expect them to add up.

Q Are you computing -- I'm sorry, are you finished with your response?

A Yes. I can't quite put my finger on this footnote. It's on Page 24, Footnote 20 explains that.

Q Are you attempting to calculate the total value for each category by the calculation?

A I'm trying to get the relative values, so I get them in comparable measures from the regression analysis and weight them by the number of minutes, multiply them by the number of minutes. So I get the price times the number of minutes to get a number that I can then add up and take shares of.

Q Is that a yes or a no?

A Can you repeat the question?

Q I asked whether or not you're trying to determine the total value for each category?

A No. I'm trying to come up with the relative values in the categories.

Q You're trying to come up with the relative value with respect to each category, but you're not attempting to calculate a total value for each category.

A Right.

Q Could you turn to Page 23? Now, in that paragraph, would you take a minute to review that?

A Okay.

Q Okay. The second to the last sentence where you say, "Essentially, this is multiplying the price per unit times the number of units to get total value." Isn't that what you're saying that you're measuring by that statement?

A Okay. So I sort of -- yes, I used the words, "total value," there, and it depends what you're talking about. In this -- the total value of the minutes in this marketplace is -- I guess I was using total value and relative value interchangeably, wasn't being as precise as I might be, but that would be one way of multiplying it by. I'd be happy to use that terminology as well.

Q So you don't really mean total value?

A Well, within this context of this analysis, yes, it's the value of the additional minute times the number of minutes. That's what I would call the value in this regression context, yes. So I'd call that total value in this context. But there are the other factors as well that go into the regression that that's why the $57 million is not the same as the total royalty pool.

Q Generally speaking, price per unit times the number of units gets you total value, right?

A Yes, but there also are other factors that are being considered in this regression analysis which is why it doesn't add up to the numbers.

Q Isn't it true, though, that the only way to calculate total value in this context would be if the incremental value for the last minute of programming, which is what you've calculated, was the same as for each previous minute?

A No, that's not true. The fact -- what I'm measuring -- there's a difference. He's willing to pay $50,000 for his car, and he's willing to pay $30,000. They have value but the marketplace value is at $20,000 per car. So they may value it higher, but the marketplace value is lower; it's at $20,000 per car. And so that's why there's a difference. I should note --

JUDGE von KANN: Mr. Olaniran, I think your down to about 15 minutes, right? So would you like to push along or would you like to take a short break and come back and do your 15 minutes or less?

MR. OLANIRAN: Let's take a short break.

JUDGE von KANN: Okay. Why don't we take a 15-minute break here? Collect your thoughts and we'll come back.

(Whereupon, the foregoing matter went off the record at 3:05 p.m. and went back on the record at 3:22 p.m.)

JUDGE von KANN: All right. Mr. Olaniran.

BY MR. OLANIRAN:

Q Dr. Rosston, in that house example, the seller couldn't maximize the market value of the house if every room was a dining room, could he?

A No.

Q And that would be because it would be difficult to sell a house where every room is a dining room.

A Right.

Q Okay. And -- I'm sorry, were you --

A Yes.

Q Okay. And doesn't this reflect the diminishing marginal utility of multiple dining rooms?

A Well, if that's the desire out of a group of different things, different parts of your house. So you have different specific rooms in your house that you want. So it may reflect the positive desire for other rooms like the bathroom.

Q So are you saying whether or not it reflects diminishing marginal utility of multiple dining rooms?

A It doesn't -- it may or may not. It depends on -- you can have a house with a lot of dining rooms, with two dining room, and a lot of other stuff and it sells for a lot of money. Or you could have a house with two dining rooms and nothing else and it won't sell for very much unless you can convert them. So it depends on what you can do with it, but I guess it could reflect diminishing marginal utility if you wanted to say that, sure. I don't see exactly how that applies, but it's quite possible.

Q If we assume that the concept of diminishing marginal utility applies -- plays a key role in the selection of programming on distant signals, isn't it true that your methodology then would significantly underestimate the total value for each category?

A No. The principle in economics is that the price is the price at the margin. That's where price is determined, and that's where marketplace value is determined is at the margin. And so while something may be -- the first unit may be extremely valuable of something, if you have lots of units, the first unit may be very valuable, but lots more may drive the price down for even that one. The first person who really has a high demand for a laptop still gets the value of a laptop at $1,000 because that's the market price today, even though you may value your laptop at $5,000. That is diminishing value, but your value is priced at the margin, and that's how economists always look at these things, is what's the price at the margin and then that's how you determine marketplace value, because the relative marketplace value is the value at the margin. The relative value of two individuals may differ greatly but the relative marketplace value is determined by the prices in the market, which are determined at the margin.

Q When I was discussing earlier the additional bathrooms and I had indicated -- I think we agreed that one way to calculate total value would be to add up all the values added by each subsequent bathroom. Do you remember that?

A I remember you said that, yes.

Q All right. Now, you do also agree that what you have calculated with regard to the coefficient is the value of the last minute.

A It's the value of the marginal minute for each category.

Q The value of the last minute for each category.

A I don't know if it's the last minute. It's the marginal minute. It's sort of the effect of adding an additional minute is what it would be called. I don't know if you'd call the last one or the marginal one, because the last one could be a higher value for some other reason.

Q And the results and coefficient that you have used to project a total value for each category.

A Yes.

Q And then relate the categories to each other to get a relative marketplace value.

A Right.

Q And you would agree then that if what you've calculated with respect to each category is the value of the last minute when you're talking in terms of total value, applying the value of the last minute to project the total value would not give you an accurate measure of total value.

A I think you'd be hard pressed to find an economist who would say that using the marginal value is wrong.

Q Is wrong for what?

A For determining what the marginal minute is, what we always look at as economists, to figure out what it's worth in the marketplace. And that's what we're trying to determine here is what are these programs worth in the marketplace. So we want to look at the value of the marginal minute. That's exactly what we're trying to do here.

Q Can you use the marginal value to construct total value?

A I think you can use it to construct total marketplace value, yes.

Q Can you use it to construct total value for each program category?

A I think -- well, unfortunately, we're getting into a semantics distinction here, and I'm losing the battle being an economist as opposed to a lawyer. The way I look at this is what are you trying -- what is the question you're trying to get, which is the relative value of these things. And by looking at the margins times the quantity gives me the relative values of these. I'm not sure -- and one thing I'm sure of is that this value here doesn't equal the total value of royalties or doesn't equal the total royalty payments that were made. And total royalty payments may not equal the total value either, because it may be worth more than was actually paid, because this is constrained to be a lower amount than would occur otherwise.

Q The negative coefficient for the devotional programming, if you'll look on Page 23, that's statistically significant, correct?

A Yes, it is.

Q Now, how do you interpret that?

A Well, I think I discussed it earlier, and in -- there are several possible reasons why it might be negative, and one is that the devotional stuff comes in a package that you can't buy just devotional alone, and there may be more than people want in that. Second is the devotional guys pay for placement in some cases and don't pay the cable systems for carrying it, so they don't get the benefit that this station does. Third is that the devotional stuff can be duplicated identically with what's already there.

And then now that I think about it a little bit more I want to respond to your question about how this marginal minute comes up. I thought about it a little bit more and it may be that the marginal minute of devotional is actually taking away a minute of sports or taking away a minute of the other stuff, so that it actually is taking away -- so the opportunity cost of that minute may be higher, and that may be another reason why you might have a negative for devotional, that it's not worth as much as the other stuff that it would be replacing.

Q Is it possible that even though the marginal -- the value of the -- the marginal value of the minute for Canadian -- for devotional programming is negative, is it possible that the total value is actually positive?

A Well, the example I would give is that you had available time on a cable channel, these guys are willing to pay you to put it on there. You could do a free negotiation and they're willing to pay you to go on there. Well, that means you are paying them a negative amount. So it seems to me that that's not -- that the value at the margin -- the first program may have positive margin, but you, once again, value things at the margin, and that's what we're doing here.

JUDGE GULIN: You said something about

devotional programming can only be bought in packages?

THE WITNESS: Well, you're buying it as part of the whole distant signal.

JUDGE GULIN: Well, that's true of everything here, isn't it, except for --

THE WITNESS: Right, but the -- no, I agree with that. It's true of everything here. Why devotional may be negative is that you may be getting more devotional than you want in that package. You may not be getting more sports than you want in that package, but you may be getting more devotional in that package. That is one possible explanation for it going negative is that it's part of a package, and you might get four hours of it a week instead of two that you wanted, and those last two are crowding out the sports or something else that you would otherwise show.

JUDGE GULIN: Okay. Well, you indicated that you buy cable for the sports. Cable operators understand that and they know people like you exist, so they want to go out and buy sports programs, but they also get what a lot of other stuff that they know that you don't want. So isn't that basically the same thing?

THE WITNESS: Well, they go out and buy sports programs with other stuff that I don't want, but they might be willing -- what they get charged -- if they get a dollar for this extra sports program -- for this extra channel that has sports and devotional on it, they might be willing to pay $1.05 if it didn't have the devotional stuff and had more sports on it. So that's the distinction.

BY MR. OLANIRAN:

Q Doesn't your model essentially estimate a demand curve with the coefficient as the price of the last minute?

A The marginal minute. Once again, the last minute may not be the marginal minute, so --

Q The marginal minute. Is it possible that one explanation for the negative coefficient for the devotional is the fact that you're actually measuring the value of the marginal minute as opposed to total value, such that the prices of the previous minutes when you add them all up actually turns out to be a positive total value? Isn't that an explanation?

A What you're trying to do is figure out -- the regression gives you the implicit market price, and the implicit market price for devotional is, in my estimation, negative. And it's not because other -- in my car example, the others were more valuable and declined to the market price. It's valuable, it's $50,000 to him. It may be the case that there are devotional -- other devotional stations that are less negative or positive, but at the margin you can get people. It's negative value.

JUDGE von KANN: Let me ask a variation on what Mr. Olaniran said. Could it be that as a cable operator I would say, okay, there's some value to my having, I don't know, two hours of devotional in my lineup. I want to have that, there is some demand for that. But more than that actually hurts me, because I have to take it away from something that there's more interest in. So beyond two hours it starts to get negative, but the two hours has value; I would pay for the two hours. I'm not sure if this is precisely the line but the notion that adding the minutes after two hours is negative doesn't seem to me to necessarily fairly measure the first two hours which might be valuable and positive.

THE WITNESS: Well, but the first -- what we get is we get sort of over the whole course of things. What happens is let's say your first two hours are worth a dollar and your second two hours cost you a dollar, okay, an opportunity cost. What I would measure in this case would be a zero. You see an average marginal effect. That you end up paying the price that is reflected. It detracts from those other ones. The total cost of this detracts from -- and remember it's not -- what a lot of my variation comes from is not a specific system adding signals, it's a variation of 7,000 different observations. So these are much more cross section than this time series of the same system. The same system is at most in my observations four times, so we're saying what different systems value it at as opposed to what the same system -- it's easier to model. You had it as the same system adding minutes, but it's much more of a cross-section sample.

JUDGE von KANN: Is there any relationship between any of this and elasticity of demand? Maybe the demand for sports is virtually unlimited. We can keep adding as much -- but for devotional it's pretty limited. We can tolerate this amount of devotional, but beyond that there really isn't much more demand, so that this -- maybe that is itself a reflection of value if demand is virtually unlimited for something versus something else where the demand is limited.

I guess I'm still trying to wrestle with this notion that the critical thing is that marginal minute and whether that truly values the minutes that led up to it. If you have a very savvy cable operator who blends his stuff exactly right, "I know I can -- I know I've got a good demand for 90 minutes for devotional. That's great, I've got it in there. Beyond that it becomes a negative for me, but 90 minutes is good. I need the 90 minutes for that crowd. I need so much of this and I need so much of that." So if he gets all the blend right, it might be that the marginal minutes would be quite different for different ones, but that the value for what he's got is a different relationship.

THE WITNESS: I think you're absolutely right in that the cable operator could manipulate the amount of minutes precisely and not buy it in these packages that are called distant signals. You would not expect in that case to see a negative coefficient. They wouldn't put on stuff that costs them. So you wouldn't expect to see it, but there is this idea that these are part of packages you can't show part of it and not the other part. You have these things duplicated, you have them that are paid programs and that sort of thing. They're part of this package and they can't fine tune it as well as you would like to see in your head, so there's that problem.

JUDGE GULIN: Isn't that in some sense an inherent problem of basing everything on minutes as opposed to thinking about a free market where in fact they would be free to buy things in discreet packages rather than whole channels?

THE WITNESS: Well, I think you've got to think about what the nature of a free market might be. And I can think of two different possibilities. If you just sort of said, well, what if they had to negotiate for this stuff? Would they negotiate with the person who owns the copyright to each and every program individually and sell it on their systems or would the cable system negotiate with a channel that aggregates the system, aggregates the channels? And what we see in the cable network marketplace is they buy channels that people negotiate on their behalf. So there still is some degree of a buying of a package of stuff, but these guys have the -- the incentives are somewhat different when they have cable networks than they are for the distant signals.

JUDGE GULIN: So if we envision the free market as the latter, which is buying whole signals, your analysis tends to hold up a lot better than if we envision it as a free market where they're out negotiating with individual copyright owners. Is that a fair statement?

THE WITNESS: I'd like to think it holds up in both, but it's clearly applicable to one. I think that people are making these decisions, both the buyers of the cable systems and the sellers of these copyrighted programs are selling into -- they have the choice of selling into different marketplaces right now. They can sell to local stations that become distant signals or they could sell to USA Network or Nick at Night or ESPN, and so they have choices in what they're selling to as well. So the suppliers are thinking about this, and that would be reflected in this negotiations directly with copyrights as well, so I think the results would apply there as well.

JUDGE GULIN: I think we took up a lot of your time.

JUDGE von KANN: Sorry. We'll give you some time.

JUDGE GULIN: Sorry about that.

MR. OLANIRAN: I'm still trying to make good time.

JUDGE GULIN: Okay.

BY MR. OLANIRAN:

Q You drew a rough graph, which I think you had the price on the y-axis and let's say the minutes of programming on the x-axis. Do you see that? Would that depict a typical demand curve for each program category?

A Sorry, this picture over here?

Q Yes. Yes.

A Okay. What did you want me to -- this was system size, so I'm going to change that to --

Q Minutes of programming.

A And this is?

Q Price.

A Price. Okay. There's a downward sloping demand for minutes of programming.

Q Right. And that would be a typical demand curve, correct?

A Yes. Downward sloping demand would be typical, yes.

Q Okay. Now, wouldn't you expect that to be the shape of the demand curve for each of the program categories that we're measuring?

A I would imagine a downward sloping demand curve for these.

Q Now, still looking at that graph, is it correct to say that your calculation basically calculates the rectangle, and if you draw a horizontal line towards the y-axis from the point on the demand curve --

A So from here?

Q Right. Draw to the left. And then you draw a vertical line all the way down to the x-axis. Now, that square or rectangle, is that the value that you calculated?

A Yes.

Q Okay. Now, with respect to the coefficient, what it appears that you've done on Page 23 is to reject the results for the devotional and the Canadian and in essence accepted a portion of the regression results. Is that an acceptable practice in your field?

A I wouldn't characterize it as rejecting the results. I'm using the results of the regression to come up with shares of this, and those were negative. I didn't think it was going to be reasonable to require them to pay additional amounts into the copyright pool, that this was not an unreasonable thing for someone to do, especially the Canadians which were insignificantly different from zero.

Q But you're not using the entire results of your regression analysis, are you?

A Essentially, I am, but I've taken account of the fact that those were negative and not a portion in each share of the royalties based on that.

Q In fact, to fully utilize the entire results of your analysis, you would multiply the Canadian and the devotional minutes all the way out as you've done with the others, and, certainly, it would result in negative numbers, but that would be the full application of your coefficients, wouldn't it?

A You could do that, yes.

JUDGE GULIN: Do you want them to pay into the fund, Mr. Olaniran?

MR. OLANIRAN: I was just asking for the logical expansion of the coefficient.

JUDGE GULIN: Got you.

BY MR. OLANIRAN:

Q With respect to the unweighted minutes that you received from Dr. Fratrik, do you have a total amount of minutes, unweighted minutes?

A Unweighted minutes?

Q Yes.

A Well, what Dr. Fratrik gave me was a sample of I believe it was 3,000 something different stations. If I look in Appendix B, I can tell you the exact number -- 3,204 stations. So those are the total minutes on those stations.

Q I'm sorry, what was the number of stations again?

A Three thousand two hundred and four stations. So these two things are very different, and maybe I -- so I had a database here from BIA, and it had 3,000 station observations, and those were divided up into the four accounting periods. For each station I had minutes of program suppliers, sports, et cetera, commercial TV, I'd better say that, right? And so if I had Station KXXX here, I show one observation of KXXX, and that may give me 100 minutes of programming, but in my -- what I've done is taken that and I may show 500 minutes of programming. Let's assume right now that was the only station but it appeared on five different cable systems. My sum would be 500 minutes even though he only gave me 100 minutes of programming, because it appears five times over here. Does that make sense?

So I see KXXX, I'd have 100 here on -- this is Cable System 1, and this is -- let's say it was only 1998-1. And it also appeared here on Station 42. I'd have another 100 minutes there. Let's just use two. I'd have 200 minutes of programming from KXXX, but in Dr. Fratrik's database it would only show 100. So my sum is going to be probably much larger than Dr. Fratrik's because I count these every time they appear on a cable system.

Q Well, just to clarify that a little bit further, with respect to the program minutes that you used as a variable in the regression analysis, would you have used, in essence, the weighted minutes by what appears to be by instances of carriage, I think?

A No. There's no weighting at all in the regression.

Q Would you have used then the raw minutes that Dr. Fratrik gave you or the minutes as you have just indicated here?

A So what I did -- now, what I did was remember there was also Station KYYY that was carried on this Cable System 1 in the same accounting period. So if this had 300 minutes of program suppliers programming, I would show wherever it was that I -- I would show a total of 400 minutes of program suppliers minutes on that station in that observation.

JUDGE YOUNG: Would you show 500 total since there was another station that a distant signal was carried?

THE WITNESS: Wait. I was just doing KXXX and KYYY on this system has a total of 400. And then this one would be an extra 100; is that what you're saying?

JUDGE YOUNG: Yes.

THE WITNESS: Yes. Okay. Yes. So if you were to add up my total minutes, you would add up and you would get a total of 500.

JUDGE YOUNG: For that accounting period.

THE WITNESS: Yes. If we assume nothing else occurred, yes, that's exactly right.

BY MR. OLANIRAN:

Q And my question is in terms of the total minutes that you used as a variable, you used your total minutes the way you calculated them for each program category, right?

A Yes. The way I added up what Dr. Fratrik gave me I added them up and that's what I used.

Q So in fact let's say we have two systems, we have System A and System B. And let's say System A carried WGN and so did System B. Let's forget for a second about program categories, let's just use total minutes. Let's say WGN had only 100 minutes. So with regard to what you did, you would have had 200 minutes total, correct?

A Total across both systems, yes. Each system would have 100 minutes, and if you added the total minutes, you would get 200 minutes, yes.

Q So your total minutes is in fact weighted by the instances of carriage then.

A Yes. It's total minutes times the number of times they're carried. So it's essentially system minutes, exactly right.

Q Okay.

A That's the total. But within the regression there's no weights at all.

Q And still staying with the same hypothetical, the unweighted minutes that Dr. Fratrik would have given you would have been what?

A So you gave me just WGN, right?

Q Yes.

A That's the only one?

Q Yes.

A One hundred minutes.

Q Okay.

A It would be 100 minutes, I believe, that Dr. Fratrik would have in that example. I haven't totaled his stuff up, but he would give me WGN, that would be the only station in one accounting period. There would be 100 minutes. And we don't have -- yes, we don't have my KXXX and KYYY.

Q Dr. Rosston, thank you very much.

A Thank you.

Q I have no questions.

JUDGE von KANN: Who's up next? Mr. Winters, is it you?

MR. WINTERS: Yes.

JUDGE von KANN: Okay.

BY MR. WINTERS:

Q Once again, Chris Winters for the Joint Sports Claimants. Good afternoon, Dr. Rosston.

A Good afternoon.

Q Dr. Rosston, I think you briefly went over with Mr. Stewart this morning the fact that you submitted some corrected testimony in this case?

A Yes.

Q Okay. And what was the nature of that corrected testimony?

A That was I corrected the -- I re-ran the regression results based on corrected data that was provided to me by BIA.

Q Okay. And that went into Dr. Fratrik's study, correct?

A That came from Dr. Fratrik's study.

Q Right, and he corrected his study as well, correct?

A I believe so.

Q Okay. If I might use the board for one second.

JUDGE von KANN: Sure.

BY MR. WINTERS:

Q Do you actually have Dr. Fratrik's testimony with you up there?

A Yes.

Q Okay. I believe you have the original pages and the corrected pages.

A I hope I do.

Q Okay. If you turn to Exhibit 10, there are -- there's a Table 2 --

A This is Exhibit 10, I'm sorry.

Q I'm sorry, it's not Table 2, it's a table with -- first, I'm going to direct you to the original.

A Okay.

Q Page 13 of Exhibit 10.

PARTICIPANT: We don't have the original, we just have the corrected.

MR. WINTERS: Okay. Well, let's just read them into the record then. Let me just very quickly put on my grid here. This is Dr. Fratrik's study, and this is original and corrected. And I'm going to put a line for Program Suppliers, one for JSC and one for Commercial Television, which I'll denote by CTV. Could you just read me the original results for Program Suppliers?

JUDGE von KANN: Which year?

THE WITNESS: Do you want 1998/99?

MR. WINTERS: Nineteen ninety-eight and 1999.

JUDGE von KANN: Okay.

THE WITNESS: Program Suppliers, 62.51 percent.

BY MR. WINTERS:

Q Sixty-two point five percent. Let me just round that.

A Okay.

Q JSC? Sports.

A Four point eight eight percent.

Q Four point eight eight?

A Yes.

Q I might as well go to the second decimal point. Commercial Television?

A Twelve point two one percent.

Q Twelve point two one percent. Okay. And then if you could just flip to the previous page which is the corrected testimony.

A Okay.

Q Could you read me out the Program Suppliers?

A Sixty point three eight percent.

Q Sixty point three eight percent.

A Sports.

Q Sports?

A Four point nine one percent.

Q Four point nine one percent. Okay. And Commercial Television?

A Thirteen percent.

Q Thirteen point zero zero percent. Okay. Now, if you look at these results, Dr. Rosston, you can see between the original and the corrected that Program Suppliers goes down, correct?

A Yes.

Q Okay. Sports goes up, and Commercial Television goes up as well, correct?

A Yes.

Q Okay. Now, if you could turn to your Table 3, I believe.

A Okay.

Q The original version.

A Yes.

JUDGE von KANN: What page is that on?

THE WITNESS: It's 23, but it's the original version, so I don't know if you have that.

MR. WINTERS: That's all right. We'll read it into the record for you.

JUDGE von KANN: Okay.

BY MR. WINTERS:

Q And let's now use the original and corrected. By the way, your understanding of Dr. Fratrik's study is that it's a study of relative time between program categories?

A Yes, that his numbers are for the amount of weighted programming minutes.

Q Okay. The original number for Program Suppliers in your testimony?

A Do you mean the final column?

Q The final column, yes.
A Program Suppliers was 47.7 percent.
Q Forty-seven point seven oh percent?
A Yes.
Q Sports?
A Sports is 33.13.
Q Thirty-three point one three percent. And Commercial Television?
A Eleven point seven six percent.
Q Eleven point seven six percent. Okay. And the corrected?
A Forty-eight percent.
Q Forty-eight point eight seven percent. And Sports?
A Thirty-two point six five percent.
Q Thirty-two point six five percent. Okay. And Commercial Television.
A Ten point nine three percent.
Q Ten point nine three percent. Okay. So we have Program Suppliers going up, correct?
A Yes.
Q JSC going down, correct?

A Yes.

Q And Commercial Television going down, right?

A Yes.

Q Okay. So in Dr. Fratrik's study of relative time, the time goes down for Program Suppliers, but in your study of relative market value, it goes up.

A Correct.

Q And the opposite is true for Joint Sports Claimants and Commercial Television.

A Correct.

Q Dr. Rosston, does your study by itself show whether there's been a change in the relative marketplace value of distant signal programming between 1992, 1998 and '99?

A No, it does not look at the 1992 marketplace value. Can I make a comment on that or am I supposed to answer questions only?

JUDGE von KANN: If you need to complete that answer, you may. If you want to --

THE WITNESS: To his question about this

going up and down or is that not --

PARTICIPANT: Well, I think you answered his question.

BY MR. WINTERS:

Q I thought you answered my question.

A Okay.

JUDGE von KANN: Mr. Stewart will get back to it if he wishes.

THE WITNESS: All right.

JUDGE von KANN: Okay.

BY MR. WINTERS:

Q Let me see if I can understand your model You tried to use a census of information on systems in 1998 and 1999? You tried to look at all systems?

A Yes.

Q Then you excluded the zero DSE systems.

A Correct.

Q Okay. And at the end of the day, your model comes up with a total value by multiplying the coefficients by the amount of royalties of $57 million, something like that; is that correct?

A Yes.

Q On Table 3?
A Yes.
Q But more than $200 million was paid into the Royalty Funds, correct?
A Correct.
Q Okay. Would you have liked your model to explain a higher percentage to the Royalty Fund?
A I don't think -- I mean it might have saved me a lot of questioning, but other than that I don't think it's -- there's a lot of other stuff going on, so I don't think it's -- that's a fatal problem at all.
Q Would you be happier if it did?
A I don't know about being happier. I think -- I'm not sure if it would add a lot or not. I don't think it would add -- what you care about is what the relative shares are.
Q Okay. And on the other hand, if it came up with a much lower explanation of royalties, would you be unhappy?
A Probably not, no. Since there's all these other factors going on in the regression, no.

Q Okay. You also performed an alternate regression analysis in preparing your testimony; is that correct?

JUDGE von KANN: Can I just ask while you're on that subject that I haven't clicked on that before. What is your explanation for why your regression analysis gets $57 million and in fact there's $200 million to be divided?

THE WITNESS: That's the marginal value, plus I have all these other factors in the regression that are accounting for things. So that's the value that's sort of attributable to the changes in minutes, but there's other factors that I'm correcting for in the regression analysis as well.

JUDGE YOUNG: But I thought you said that given that r squared factor that this can explain for 70 percent.

THE WITNESS: Yes, but I'm looking at -- but 70 percent was when you include all the variables, and the program stuff is part of the variables. It's a subset of that.

JUDGE YOUNG: So will you explain 70

percent of $57 million?

THE WITNESS: No. This is $57 million, plus, by the way, $200 million is all the royalties that are paid in. There are 17 percent of the systems that have zero DSEs and those tend to be larger systems, so the $200 million is not what mine would be even if you were trying to think about it. That way you wouldn't try to explain the full $200 million. You would have something that's at least 17 percent less and probably more than 17 percent less than that.

JUDGE von KANN: Is a possible explanation for this the thing we were talking about earlier, that is that at some level the marginal value of some additional devotional or additional "I Love Lucy" goes down, but the value of the sort of initial slug of it was quite a bit higher, and if you got the number of minutes, you'd sort of account for the difference between $57 and $200 million. Is that a possible explanation?

THE WITNESS: I don't think that that works.

JUDGE von KANN: Okay.

THE WITNESS: Because it's sort of the value -- as I keep trying to say, you know, I sound like a broken record, the marginal valuation is what determines the marketplace.

JUDGE von KANN: We've noted that thesis.

(Laughter.)

Okay.

BY MR. WINTERS:

Q And I assume you think it's fair to project from that to the entire Fund?

A Yes.

Q Okay. And my last question before I got sidetracked a little bit, not that it was --

A I thought it was your last question.

(Laughter.)

Q You performed actually two additional kind of alternative regression analyses in your preparing your testimony, correct?

A I did -- I believe there are three different regression analyses in the appendix.

Q Right. There's the one you presented here today, correct?

A Sorry. There's three different ones in the appendix.

Q I'm sorry, there's three different ones in the appendix. There's the one you presented today --

A Plus three in the appendix.

Q Okay. So there's four, a total of four, correct?

A Yes.

Q Okay. And one of the alternative regression analysis was an analysis of all systems that carried one or more DSEs; is that correct?

A Yes.

Q And that was -- you thought that that was a reasonable basis to perform a regression analysis?

A Well, I ended up using the one with DSEs greater than zero for a few reasons. I thought that was a better way of doing it. One is that, as I explained in the text of my analysis, that what you want to think about is these people paying a positive price for the next signal they take, and the majority of signals are a DSE equal to one in the sample so that that is -- that's one reason. The second is that even the change from 0.25 to 0.5 DSEs gives you some information because it increases the amount that possibly they can charge to subscribers or the number of subscribers they get. So that's important.

And it allows you to make use of more of the information. What I tried to do is to not exclude information that might be relevant to bear on this question. So I thought that it was better and I got more precise estimates with the DSE greater than zero than the DSE greater than one. So my preference is for the DSE greater than zero for those reasons.

Q Well, and your testimony, Page 12-13, if you could look at that. I think the carryover sentence, I believe, is what I'm looking at here. You testified that systems with more than zero DSEs but not more than 0.75 DSEs also face a zero price for a distant signal counted at 0.25 DSEs. Systems with more than 0.5 DSEs face a positive price for all additional signals, correct?

A I think it was systems with more than 0.75. Actually, and I should amend that. The zero price is zero additional royalty rate, that they may face a positive increase in royalties because of additional subscribers that are attracted. If they put on an additional DSE, an additional 0.25 DSE, they still may pay higher royalties because they get additional subscribers and that increases their royalty rate. So that that's one of the reasons why the systems between greater than zero and 0.76 do provide additional information as well.

Q Okay. But they wouldn't pay any additional royalties as a result of the carriage of that signal.

A Well, no, their rate wouldn't change.

Q Right.

A They may pay additional royalties, but the rate, the price -- the price for that is no change, but the actual royalties may change.

Q In other words, their price might not be motivated specifically by the price in royalties of bringing in an additional signal, but it would be the result of the price of royalties in additional subscribers.

A Right or the monthly rate.

Q Okay.

JUDGE von KANN: So if you were to modify this, you'd change the words "zero price" to what?

THE WITNESS: To zero incremental royalty rate.

JUDGE von KANN: Okay.

BY MR. WINTERS:

Q Are you aware that many signals or many systems that carry fewer than one DSE carry partially distant signals?

A I believe if you look at the -- I lost my table. On Page 17, on Table 1, 20 percent of systems carry partially distant signals, and I didn't break that down to whether they were greater than or less than one.

Q Okay.

A I may so that you can tell the difference.

Q You don't know whether or not the systems that are from zero to one DSE carry -- a higher percentage of their signals are partially distant, you don't know that answer.

A I don't know the answer to that question.

Q Okay. Now, you actually produced the results from this alternative regression analysis in your Appendix C, but you didn't multiply the results out to show the relative shares, or did you?

A I may have done that at some point. I didn't include it in the testimony.

Q You didn't include it in the testimony. By the way, which regression analysis did you do first? Did you do the one with all distant signal equivalents positive, positive distant signal equivalents first? Did you do the one with only one or more DSEs first?

A I'm almost positive that we did the one with all greater than zero first.

Q Okay. And you presented all the necessary data in the appendix to complete that analysis. You just didn't multiply it out.

A I believe so.

Q Okay. I'm going to hand out what's been marked as JSC Exhibit 14-X.

(Whereupon, the above-referred to document was marked as

JSC Exhibit No. 14-X for
identification.)

JUDGE von KANN: Your penmanship is improving, Mr. Winters. A nice clear 14-X. The earlier ones were a little --

MR. WINTERS: It could be that the other ones were marked by Mr. Garrett.

PARTICIPANT: Or it could be the other way around.

(Laughter.)

JUDGE von KANN: We'll leave that a mystery.

BY MR. WINTERS:

Q Dr. Rosston, have you taken a look at JSC Exhibit 14-X?

A I'm still in the process.

Q Okay. When you do let me know.

A Yes, I've taken a look at it.

Q Okay. And if you turn to Appendix C and compare Column B in Appendix C with the basic regression results for Form 3 cable systems with positive distant signal equivalents greater than or equal to one, do the coefficients appear to match between what is in Appendix C and JSC Exhibit 14-X?

A The numbers do look the same to me.

Q Okay. And then if you flip a couple of pages back, there's a page that says, "Minutes carried by programming category."

A Yes.

Q Okay.

A With distant signal equivalents greater than or equal to one?

Q Yes, that one.

A Yes.

Q Do the minutes on that page appear to match the minutes on JSC Exhibit 14-X?

A They appear to, yes.

Q And let me direct --

JUDGE YOUNG: Are you talking about Appendix B?

MR. WINTERS: Appendix C.

THE WITNESS: No, Appendix D.

MR. WINTERS: I'm sorry.

JUDGE YOUNG: It's C and then D.

THE WITNESS: We started with C.

MR. WINTERS: Oh, okay. They are two different appendices. Yes, C is the coefficients and D is the minutes.

THE WITNESS: Yes. Correct.

BY MR. WINTERS:

Q And also I'm flipping back to Appendix C. At the bottom of Appendix C there's an r squared number?

A Yes.

Q Okay. And that r squared number is 0.701?

A Yes.

Q And that's similar to the r squared number for your other regression analysis for all systems with positive distant signal equivalents?

A I believe it is. I believe they were both around 0.7.

Q And there's no real meaningful distinction between those r squared numbers?

A As I said before, I wouldn't put a lot of stock in the r squared numbers anyway. So they're very close.

Q You said anything -- I guess, a 0.7 is really, really high anyway.

A Yes, right.

Q So the difference between .701 and .702 is obviously not very meaningful.

A Not something that most people would worry about.

Q And if you look on JSC Exhibit 14-X Column D --

A Yes.

Q -- the bottom of Column D. Do you see the number there? It's 57,139,270.

A Yes.

Q How does that compare to the total value of minutes in your Table 3 on Page 23?

A It's very close as well.

Q Very close as well. Judge Young asked you a question about judgment in presenting this analysis. You had these two alternative regression analyses and you just decided to present the one that came out with a result that's reflected in Table 3 on Page 23. You also had before you the results of the alternative regression analysis, which is JSC 14-X, and you chose to present the one in Table 3, correct?

A Yes.

Q That's all I have.

JUDGE von KANN: Okay.

JUDGE YOUNG: This may reflect sort of a basic lack of understanding of some issues here, but you had said that part of the explanation for why the total amount paid into the Royalty Fund that you're focusing on, $57 million as opposed to $200 million, you said they were the stations with --

THE WITNESS: Systems.

JUDGE YOUNG: -- systems with zero DSEs.

THE WITNESS: Right.

JUDGE YOUNG: I guess I missed it, but do they pay money into the Royalty Fund?

THE WITNESS: Yes. With zero DSEs, they pay a minimum of -- they pay for one -- for Form 3 systems. All Form 3 -- that's why I ended up with this distinction with greater than one or not. All Form 3 systems pay for one DSE.

JUDGE YOUNG: Even if they have no distant signal?

THE WITNESS: Right. So they pay -- that's why if you look back at this -- I don't have an exhibit number written on mine, so I can't tell you the exhibit number.

JUDGE von KANN: Is it 14-X?

JUDGE YOUNG: PS 18-X. PS 18-X.

THE WITNESS: If you look at the second line down, Las Vegas.

JUDGE YOUNG: Right.

THE WITNESS: it says, "Construct DSE is zero."

JUDGE YOUNG: Right.

THE WITNESS: And they still pay royalties. So those were the ones that I excluded from my regression because they pay royalties but they get nothing for it. This is something that I'm sure the people in this room have strong opinions about why they should pay into it, but for my purposes they were ones that I exclude because they didn't provide information about the relative values of different programs, because they didn't buy any different programs.

MR. WINTERS: I would just move Exhibit 14-X for substantive purposes.

JUDGE von KANN: Mr. Stewart?

MR. STEWART: Subject to checking the numbers.

JUDGE von KANN: Okay.

(Whereupon, the above-referred to document, previously marked as JSC Exhibit No. 14-X for identification, was admitted into evidence.)

JUDGE von KANN: And, Dr. Rosston, it's probably late in the day and the week and I apologize for having missed it, but tell me again briefly what is the difference between the regression analysis on Page 23 and the one in this Exhibit 14-X. What were the variations --

THE WITNESS: Sir, the two differences are -- if you look on Page 23, it says with positive distant signal equivalents --

JUDGE von KANN: Right.

THE WITNESS: -- on the third line down under Table 3.

JUDGE von KANN: Right.

THE WITNESS: And then the Exhibit 14-X says Form 3 systems with distant signal equivalents 1.0 or higher. So they excluded systems that had distant signal equivalents of 0.25, 0.5 and 0.75., and those were ones that I thought should be included because they provided additional valuable information.

JUDGE von KANN: Okay. Mr. Dove? Are you going to print this?

PARTICIPANT: You might want to mark it as a demo.

MR. WINTERS: Yes. It will be another joint demo. What number are we on? Thirteen Demo.

(Whereupon, the above-referred to document was marked as JSC Demo 13 for identification.)

JUDGE von KANN: Let's see here, we've been going not quite an hour. We can go some. I think you had predicted an hour. I'm not sure we'll make it all the way through that, but let's go for a while and then we'll take a break at some point.

BY MR. DOVE:

Q Good afternoon, Dr. Rosston.

A Good afternoon.

Q My name is Ron Dove, and I'm counsel for the Public Television Claimants. I'd like to direct your attention to Table 3 on Page 23. And I would like to focus your attention specifically on the row labeled, "Public Broadcasting," and just would ask for you to please explain the entries in this Table as they relate to public television.

A Okay. So on that row, the coefficient from the regression analysis is 0.067. So for every additional minute of public broadcasting, the royalties would go up by 6.7 cents. And there were 64,107,541 minutes associated with that on cable systems, associated with Public Broadcasting. So then I multiplied 0.067 times 64 million and got 4,295,205. The next column is simply that 4.29 million divided by 57 million, which is the sum of the column, which got me 7.52 percent. It goes up to 7.54 percent because of the exclusion of the low power and Mexican royalties in the next column.

Q So as I understand it, your analysis yields a share of royalties for Public Television of 7.54 percent, excluding Mexican and low power; is that correct?

A Yes.

Q And this is a share of the entire royalty pool; is that correct?

A Yes.

Q Are you aware that the royalties in these proceedings are split into three separate funds: The Basic Fund, the 3.75 Fund and the SYNDEX Fund?

A Yes.

Q And are you aware that Public Television only draws from the Basic Fund?

A Yes.

Q Now, given that Public Television only draws from the Basic Fund and that your estimates relate to the entire royalty pool, would you agree that Public Television's 7.54 percent share of the total royalty pool would need to be mathematically converted upward to arrive at Public Television's share of the Basic Fund only?

A Yes. This would be much easier for the Panel to do and the splitting into years, because, for example, if each fund were worth $50 million and Public Television's share is 7.54 percent in my estimate of the $100 million, it would be 15 percent of the -- I forget what you called it -- the basic pool?

Q The Basic Fund is what Public Television participates in.

A Excuse me, sorry. The Basic Fund. So it's just -- you can easily do this conversion based on what size the different pools are.

Q Maybe the way that I like to think about this is to draw an example on the board. Say that this is the total pool of royalties, and this is Public Television's share of that total pool. Maybe I should have made it a little bit more but for purposes of this --

JUDGE von KANN: Don't be greedy.

THE WITNESS: That's about 7.5 percent, isn't it?

BY MR. DOVE:

Q And then if you have the same diagram of the total pool, here's Public Television's share, but you split that pool so that let's say this part is the Basic Fund part of the total pool, and this part is the 3.75/SYNDEX part of the total pool, it stands to reason that the Public Television share of this Basic part of the entire pool is a greater percentage than the Public Television share of the total pool; is that correct?

A Absolutely.

Q Okay. Now, Dr. Rosston, I'd like you to assume that the 3.75 and SYNDEX Funds together equal about ten percent of the Basic Fund. So in other words, if the total royalties in the pool were $110 million, $100 million would be the Basic Fund and $10 million would be the 3.75 and SYNDEX Funds combined.

JUDGE von KANN: Ten percent of the Basic Fund or ten percent of the total?

MR. DOVE: It's actually ten percent of the Basic Fund.

JUDGE von KANN: Okay.

BY MR. DOVE:

Q And just to link this assumption with reality, I'd like to show you what has been previously marked as NAB Exhibit 12-X.

JUDGE von KANN: The ever popular one.

THE WITNESS: Is it legible?

BY MR. DOVE:

Q It is legible. And I'd like you to look at this exhibit. This, as you can see on the lefthand side of this exhibit, Dr. Rosston, the rows are broken down first by accounting period, 2001-2, 2001-1, et cetera, and then under each accounting period, it's broken down into Form 1 cable systems, Form 2 cable systems, Form 3 cable systems. And then the 3.75 Funds and SYNDEX Royalty Funds are separately set out. And then you get a total of the Form 1, Form 2 and Form 3. Do you see that?

A Yes.

Q And do you see, I guess, the third column over titled, "Royalty," do you see that column?

A Yes.

Q And I'd like to focus your attention just as an example to the bottom set of rows, the 1999-1, and let's just look at these numbers as an example. As I interpret this Exhibit 12-X, the total Form 1, Form 2 and Form 3 royalties for 1999-1 equal approximately $54.6 million; is that correct?

A Yes.

Q Okay. Let me put that up here, $54.6 million total for that half-year time period. And then subtracting out of that the 3.75 and SYNDEX Funds, I add those two together and get approximately $5 million; is that correct?

A That looks approximately right, yes.

Q Okay. So $54.6 million total funds minus $5 million, doing the math, equals approximately $49.6 million in the remainder which is the Basic Fund; is that correct?

A Yes.

Q Okay. And then to get a sense of the relationship between the Basic Fund and the non-Basic Fund, in other words the 3.75/SYNDEX Funds, you would take the $5 million and divide it by the $49.6 million, and that's roughly a ten percent relationship, correct?

A Yes.

Q Now, given this assumption that the 3.75 and SYNDEX Funds together equal about ten percent of the Basic Fund, I will now do this mathematical conversion, converting Public Television's 7.54 percent share of total royalties into a share of Basic Fund royalties; is that okay? And I'm going to perform this, a simple calculation here on the board and then ask you if this makes sense to you. There may be an easier way to do this, but this is the way that I figured it out in my head.

As I understand it, B is the Basic Fund, plus 0.1B would be the non-Basic Fund, and that equals a whole 1, which is -- that would be 1.1B equals 1, so the Basic Fund part of this would be B equal to 1 divided by 1.1, equals 0.91. And that's kind of the Basic Fund part of the whole. Does that make sense to you?

A The Basic Fund is 91 percent of the whole.

Q That's correct. And then through the conversion you would take your share for Public

Television of 0.754, divide it by the Basic part of the Fund, which is 0.91, and you would get 0.083; in other words, 8.3 percent of the Basic Fund for Public Television. Is that correct?

A I can't do the math in my head, but that sure looks like the reasonable way to do it to me. I would make sure you -- basically that the Panel does this methodology but does it with the actual numbers.

Q So just to confirm it for you, .0754 divided by 0.91 equals approximately 0.83, correct?

A Approximately, yes. But you also want to make sure that this leads to -- it makes a lot of sense that you would do this math and increase the share of Public Television in this Fund and decrease the shares of everybody else in this Fund, but then my numbers would be -- have to be increased for the remaining people in the 3.74 and SYNDEX Fund. The shares would go up because you wouldn't have the Public Television share in that other Fund, right?

Q That's right. And then just to be clear, because we are using a ten percent estimation, if Public Television's share of the Basic Fund would be higher than 8.3 percent if the 3.75 and SYNDEX Funds together equaled more than ten percent of the Basic Fund, correct? If it actually turns out at the end of the day when we add up all of the numbers that it's 11 percent and not ten percent, Public Television's share of the Basic Fund would be a little bit higher than 8.3 percent; is that correct?

A Right. In fact, the easy way to think about this is you're just adding roughly ten percent to this number to get that number is the rough approximation. And the higher percentage the 3.75 and SYNDEX is, the more you have to add to the 7.5 percent.

Q Thank you.

A Want your calculator back?

Q I'm going to need it again, so --

A Okay.

Q I'd now like to direct your attention to Table 2 on Page 19. Dr. Rosston, what does this Table tell you with regard to Public Television? I mean let's focus on the explanatory variable, minutes of public broadcasting programming and then the figures associated with that row.

A So once again, the coefficient of 0.67 is the estimated coefficient or the estimated contribution of Public Broadcasting to royalties, and the number below it is the standard error, the precision with which it's measured. And the asterisk means that it's statistically significantly different from zero.

Q Okay. And the number in parenthesis, that's the 0.015; is that correct?

A Yes.

JUDGE von KANN: That phrase, statistically significantly different from zero, strikes me as something that only a statistician could love. It's a strange way of saying it, but I guess I understand it, the meaning of it.

THE WITNESS: It's you're confident that that number is not zero.

JUDGE von KANN: Right. And at zero, that variable has no impact on the --

THE WITNESS: Right.

JUDGE von KANN: -- analysis. Okay.

BY MR. DOVE:

Q Now, Dr. Rosston, I'd like to do one more set of calculations here. This one's a little bit more involved, I think. I'd like you to again look at Table 2.

A Okay.

Q And at the Public Broadcasting numbers there. And my question is this: If the Public Television coefficient were set at the upper end of the 95 percent confidence interval and you kept all the other coefficients constant, the Public Television share of royalties would increase; is that correct?

A If you raised the Public Television coefficient and kept everything else constant, yes, the Public Television share would go up, absolutely.

Q Now, if you were to do that calculation, how would you do it? I can walk you through how I think you might do it if that would be easier, but you could also tell me what to write and I'll --

A If you were to do that calculation, okay, what you would do is you would take 1.96 times -- if you're trying to do this calculation precisely, use

1.96 instead of 2.

Q What is 1.96?

A One point nine six is the -- it's the number of standard deviations to give you 95 percent confidence from a T table, and so you would use the number 1.96 times the standard error.

Q And times the standard error which is?

A Zero point zero one five.

Q Zero point zero one five, okay. You would multiply that. Okay, let's do that. That's --

A Do you want me to do it so then I can read it to you?

Q Sure, that would be great.

A So I multiply 1.96 times 0.015, and I get a 0.0294.

Q Okay. So this equals 0.0294, okay.

A And then I would add that -- I assume you want the high end of the confidence interval not the low end.

Q That's correct. Somebody else can worry about that.

A Okay. So I would add that to 0.067, and that gets me to 0.0964.

Q Okay. So that would equal 0.0964, and that would be the new Public Television coefficient, correct?

A Well, I'm not sure what I'd call it. It's the high end of the confidence intervals for that estimate.

Q Okay. Then what would you do to try and calculate the high end share based on my assumptions that, again, the Public Television coefficient is set at the upper end of the 95 percent confidence interval, all other coefficients are held constant?

A Just to mechanically do this, I don't want to say this is what I would do, but to mechanically go through with your example --

Q Right.

A -- which is what I'll continue to do, you would then turn to Table 3 and substitute in 0.0964 for the Public Broadcasting coefficient in Column B.

Q And you would multiply that, I take it, by the 64,107,541 Public Television minutes; is that correct?

A Yes. That would get you the value -- the value in Column C would stay the same.

Q Okay.

A And the value in Column D would change. And it doesn't have commas but it looks like -- oh, it does, commas up at the top, that's kind of strange. It's 6,179,966.952, so .967.

Q Nine-six-seven, okay. And then I take it the next thing you would need to do is to calculate or recalculate the total minutes to use in the denominator; is that correct?

A Yes. The total -- that would change the number 57 million, so I can calculate that if you'd like.

Q Yes, I would.

A Okay. So what I'm going to do is subtract -- I won't swear to these numbers because I might hit the wrong button, but 4231098 and I hit minus, I think. Hang on, let me try that again. So the difference is 1,948,869, so I'd add that to the 57,215,601, and I get 59,164,470 for the total value of the minutes. And then to get the Public --

Q So you get 59 -- I guess the way -- I had taken the 57,137,998 original total minutes and then I subtracted the old --

A But you got a different number for the old minutes than I do.

Q Do you have the corrected page?

A I'm looking at the wrong page, I'm sorry.

Q That's okay.

A I apologize for that. I told you I wouldn't swear to these numbers.

Q So, again, you start with 57,137,998.

A So wait. So I multiply the 0.067 times -- well, the numbers stayed the same in the corrected, so that was okay. That was lucky. Okay. So, 59,022,760?

Q That's what I get.

A Okay. So that's the total minutes, and then you would divide 6,179,967 divided by 59,022,760, and you get 10.47 percent.

Q Ten point four seven percent.

JUDGE von KANN: He put it up there, didn't he?

PARTICIPANT: Wait till he does the low end.

(Laughter.)

JUDGE von KANN: There's no board space, though.

MR. DOVE: Right. We're running out of time.

JUDGE YOUNG: Actually, you could do the same analysis with everybody, I take it.

THE WITNESS: You could, yes.

JUDGE YOUNG: And does it look like the -- the second line in the parentheses, what do you call that again?

THE WITNESS: The standard error.

JUDGE YOUNG: Standard error. If the standard is greater for some of the others, does that mean you could have a higher bump up?

THE WITNESS: Well, it's actually a -- yes, you wouldn't get -- if you bumped everybody -- first of all, this is not something you'd want to do is to bump everybody up, because you're sort of saying, well --

JUDGE von KANN: You're over 100 percent for starters at that point, aren't you?

THE WITNESS: Well, no, but your best estimate is the estimate that's there. Well, the fact that I'm 95 percent confident that one is sort of below this top end of the confidence interval, that means there's a five percent chance it's outside my bands. Well, once I do two, it's five percent times five percent chance that I got two of them out there. And five percent times six, which gets you to almost no chance that they're all top end of the band. But you could do it for that, and what you'd find is that the ratio of the standard error to the coefficient is what determines. So which one would move the most depends on the ratio of the standard error to the coefficient, which one would get the biggest jump in share.

If you put everybody at the top, you could do that, I don't think it would make a lot of sense, but the one that would probably just sort of looking at it, I'm not sure which would happen the most, Program Suppliers probably wouldn't change very much at all, because there's a one cent standard error on the Program Suppliers and Public -- well, I guess they're twice as big in their coefficient as Public Broadcasting so they wouldn't move as much percentage-wise.

JUDGE von KANN: Okay.

BY MR. DOVE:

Q I'm not even finished yet. I've got one more calculation that will get us even higher.

JUDGE von KANN: Oh, my God.

JUDGE YOUNG: At some point are you going to tell us why we should do this?

MR. DOVE: Well, yes. I mean --

JUDGE von KANN: Closing argument.

MR. DOVE: Closing argument. But I'm trying to establish the boundaries here. One final calculation I'd like to do is obviously this 10.47 percent that we just calculated, again, is a percentage out of the total Royalty Fund, correct?

THE WITNESS: Yes, I guess.

BY MR. DOVE:

Q So if you were to -- if this were Public

Television's share, 10.47 percent, it would again have to be converted to a percentage of the Basic Fund, isn't that correct, so that you would have 0.1047 divided by 0.91 to get a percentage -- basically, to represent this 10.47 percent as a percentage of the Basic Fund, correct?

A If you were doing it that way. Yes, if they found that it was 10.47 percent of the total, then it would have to be a bigger percentage of the -- and that's how you would go about finding out what percentage it is of the Basic Fund.

Q And just to tie the loop, that number would be 0.1047 --

A I'll do it quick so I can say yes to your question.

Q -- divided by 0.91.

A Two percent.

(Laughter.)

Eleven point five percent.

Q Eleven point five percent.

JUDGE YOUNG: Let me just ask again because I think I am sort of -- if you do the same analysis and say for each of the program categories, let's hold everybody else constant, assume there's some good reason to go to the high end of the interval, you could do the same mathematical structure.

THE WITNESS: Exactly. You could do exactly the same thing for anybody on this.

JUDGE YOUNG: Okay.

JUDGE GULIN: And you divide by that 0.91 only if it's exactly 90 percent.

THE WITNESS: Yes. The math on this depends on the relative -- the exact sizes. I encourage you not to use exactly 0.91 but to actually use the actual numbers from here.

JUDGE GULIN: Well, I wasn't -- you do the same analysis Mr. Dove did to get to 10.47.

THE WITNESS: Right. Yes, you could do that for Program Suppliers and hold everybody else constant, and Program Suppliers' share would go up. You could do it for Sports, and Sports' share will go up. Any time you raise one and keep others constant, this is a zero sum game, not only would everybody else

-- if you held the regression coefficient constant, not only does one coefficient go up but the others go down -- not coefficient, sorry. One coefficient goes up, the other coefficients stay the same, but the shares go down, because you have to add up to 100 percent.

JUDGE YOUNG: And, conceivably, if there's a good reason to reduce somebody to say this mid-point overestimated it, you could do the same analysis the other way.

THE WITNESS: Right.

JUDGE YOUNG: Okay.

BY MR. DOVE:

Q Dr. Rosston, just again to tie the loop, I'd like to introduce as PTV Exhibit 14-X a summary of the results of the calculations that we just did.

(Whereupon, the above-referred to document was marked as PTV Exhibit No. 14-X for identification.)

JUDGE von KANN: What number?

MR. DOVE: Fourteen-X. Dr. Rosston, have

you had a chance to look at this Exhibit 14-X?

THE WITNESS: Yes.

BY MR. DOVE:

Q And do these results match your understanding of what Public Television's share would be under the assumptions that we just made in our calculations?

A Yes. Under those assumptions these seem to match the numbers that are on the board and with the proviso that we did the calculations correctly.

MR. DOVE: I would move the admission of this exhibit.

MR. GARRETT: I'll object to it. I think if we're going to go through this exercise, that we ought to have the numbers both at the high end and at the low end. We ought to have them for all of the claimants to put in the record. And I don't think at five o'clock on Friday night we're going to sit here and try to go through all those calculations with Dr. Rosston. If this is relevant, if this is important in some way, I think we should have the full set of numbers in for everybody, the high end and the low end.

MR. MAUSE: I join in the objection, because Dr. Rosston has testified that he'd take the Music share out first, and I believe in making this calculation that was not done, so I'm not sure what this represents, whether this represents everything. It looks like it represents everything except Music, but it doesn't really say that.

JUDGE GULIN: Let me just comment. I don't think this is the proper sponsoring witness if you're talking about putting this into evidence. He doesn't agree with the evidence. Why would he be a sponsoring witness unless you're saying this is just a demo.

MR. DOVE: No. I'm saying this is for -- it's a summary of what we just did on the board. These are based on the numbers -- just like any other hypothetical -- well, it's not even a hypothetical. These are calculations that are based on numbers -- figures in his chart just like the alternative -- in some ways the alternative regression analysis that Mr. Winters handed out. It's subject to -- I mean I don't know if Mr. Stewart has an objection to it or not. I don't -- for impeachment purposes, it is a -- it is what it is. It's a summary of what --

JUDGE von KANN: So you're moving it for impeachment.

MR. DOVE: Yes. Yes. I'm sorry. I may have misstated.

JUDGE von KANN: Any objection to being received for that purpose?

MR. GARRETT: I'll object to it on the basis that it's misleading and incomplete.

JUDGE von KANN: All right.

JUDGE GULIN: Well, let me just ask this one thing: If we just copied the board and handed it out as a demo, would you object to that?

MR. GARRETT: I think I will object to that. I probably should have objected to the entire line of cross examination. Now the Panel is free to rule and admit it however you wish, but for the record, I think it's misleading, I think it's incomplete, I think it's prejudicial to have this kind of data in here for just one claimant.

JUDGE von KANN: Okay. Mr. Stewart, since it's your witness, we might briefly hear you.

MR. STEWART: Thanks. Mr. Winters just put on another exhibit, 14-X. That simply took numbers that this Witness provided as part of our direct case, recalculated them to look better than the numbers that this Witness sponsored and prefers. Frankly, I don't -- my own view is that it wouldn't be necessary to put in an exhibit to be able to propose to you in proposed findings if you take this number from this place and that number from that place and you make these assumptions, these are the numbers that come out. So I view it as unnecessary but also unobjectionable because all of the qualifications Mr. Garrett stated are in the record. So I guess I don't object, but I would object to -- but I do believe that what's in the record now is an explanation of what the numbers in Dr. Rosston's testimony and tables mean, and we should be able to use those as substantive evidence to draw whatever conclusion from it.

JUDGE GULIN: I do see a difference between what Mr. Winters did and this, quite frankly.

JUDGE von KANN: Briefly, Mr. Garrett?

MR. GARRETT: Well, I wanted to follow-up on that point.

JUDGE von KANN: Right.

MR. GARRETT: First of all, what Mr. Winters did was to give the data from all of the claimants, and it's taken exactly as it is in the appendix of Mr. Rosston. We were surprised that he did not as part of his report multiply out the numbers to give the final shares. That's all he did was multiply the various coefficients times the other data in there to get the final shares here. But at least we put in all of the evidence for all of the different parties. And I think it's unfair to characterize this as putting this in because it's favorable to Sports. Yes, he did the analysis, we didn't do the analysis. He did the analysis, those were the numbers, but he did not disclose what those numbers were, at least as bottom line shares, and that's all we did.

JUDGE von KANN: Okay. Yes?

MR. DOVE: Well, I'd just like to say one other thing is you'll see next week, I mean Public

Television is putting in an expert who's going to give an expert opinion about what the share of Public Television should be. That expert does not go through what the shares of all the other claimant groups should be. So the fact that in this example I didn't go through and list all the other claimant groups, in my view, should not be relevant.

(Bench conference.)

JUDGE von KANN: We'll receive the exhibit as a demo, whatever PTV's next demo number is. It was essentially an aid to a demonstration done with the Witness, and we've heard the testimony, and we recognize it's not the entire story in this case.

MR. DOVE: I believe it may be Demo Number 1.

JUDGE von KANN: Well, that's a good number. Put it down. Okay. Next?

BY MR. DOVE:

Q I guess I'd like to add to that while we're talking about demos. I'd like to also submit as PTV Demo Number 2 a copy of the calculations on the board.

JUDGE von KANN: As Demo 2?

MR. DOVE: Yes.

JUDGE von KANN: Any objection? Okay. We'll receive them as Demo 2.

(Whereupon, the above-referred to document was marked as PTV Demo Number 2 for identification.)

PARTICIPANT: Normally, we have demos marked.

JUDGE von KANN: Huh?

PARTICIPANT: We don't receive demos.

JUDGE von KANN: No, not legally but physically we receive them.

BY MR. DOVE:

Q Dr. Rosston, if you could turn now to JSC Exhibit 14-X. Do you have that in front of you?

A Yes, I do.

Q If I could direct your attention to the Public Broadcasting row on JSC Exhibit 14-X.

JUDGE von KANN: Let me just get one thing cleaned up for the record. I got a little lackadaisical. The Joint Sports Exhibit 14-X, as I understand it, was received generally, subject to verification.

MR. STEWART: Well, I'd like to raise an objection to it out of time, I suppose, but nonetheless in light of what we've just done with Mr. Dove's exhibit, I believe this also should be marked as a demo and not as an exhibit for substantive purposes. This is a set of calculations that use numbers presented by Dr. Rosston in his testimony. He testified about why this is not the approach that is the proper one, and as a result I think it's in the same category as the exhibit that Mr. Dove just put in, notwithstanding the fact that it happens to include other numbers. One could easily just simply put in however many, five or six different versions of Mr. Dove's and come up with the same effect.

JUDGE GULIN: Mr. Stewart, this is what your own Witness put into evidence, except he just didn't bother to complete the calculations. Don't you see a difference there? In other words, the calculations in the last column are just a natural consequence of doing the math.

MR. STEWART: Certainly. And we provided the complete data, and everyone who has that data can make those calculations just as Mr. Dove's calculations could be made.

JUDGE GULIN: Who's a better sponsor of this than the witness that we have here? This is his methodology, this is his -- this is what he put into evidence that said, "This is one way of looking at it, and, yes, the methodology that I propose I like a little better but still this has validity." I mean if you want to ask the Witness if this has no validity whatsoever doing a regression analysis in this fashion, then I guess he's not a proper sponsor. But I don't think that's what he said.

MR. STEWART: Judge Gulin, I didn't object when it was introduced originally, but it is in light of what we've just done based on Mr. Garrett's objection to what seems to me to be precisely the same kind of exhibit. They ought to have the same status.

(Bench conference.)

JUDGE von KANN: Mr. Stewart, we are going to receive it generally as we originally did, subject of course to verification, and we understand and we heard witness' -- we're receiving it because he's, in a sense, vouched for its accuracy, although he believe it's not the most appropriate way to go at this exercise, and we've heard that. Okay. Let's go ahead, Mr. Dove.

BY MR. DOVE:

Q Dr. Rosston, if I could direct your attention to the Public Broadcasting row of this JSC Exhibit 14-X, do you see that?

A Yes.

Q Do you believe that the calculation of the Public Television share on this particular exhibit is the best calculation of the Public Television share under your methodology?

A No. I think the one on Table 3 in my report is better, because it takes account more of what's going on.

Q And precisely I think you mentioned some of these factors, but just to be clear for the record what are the reasons that you believe that the Table

3 depiction of the Public Television share is a more accurate reading of the Public Television share than what is on JSC Exhibit 14-X?

A Well, generally, because it comes from the regression that I think takes account more of the information, takes account of more of the channels that are there and reflects the reality of the distant signals that people might be adding. So it takes account of all positives -- all systems with positive distant signal equivalents, so I think that that's, in my mind, a better regression analysis to use and hence comes up with a better measure of the shares for not only Public Broadcasting but everybody in this.

JUDGE GULIN: Dr. Rosston, why did you do this exercise?

THE WITNESS: Why did I do --

JUDGE GULIN: Why did you do the --

THE WITNESS: Appendix C?

JUDGE GULIN: -- methodology? Yes.

THE WITNESS: Well, I thought it would -- to see if there would be huge differences if I looked at those, because, as I explained in the text, there is a different -- everybody who has a DSE of 1 is changing their rate for the next distant signal that they get, royalty rate. Everybody who's below 1 is not necessarily changing their rate. The people between 0 and 1 are not changing their rate, but they're changing their royalties. So you get more information. And the question was, gee, do I get wildly different results from doing it the other way, and the answer was, no, I don't get wildly different results from the -- and especially if you look at the regressions.

JUDGE von KANN: Which one did you say you did first? I'm sorry, I missed it.

THE WITNESS: I did the zero first.

JUDGE von KANN: The one that's in your report --

THE WITNESS: Yes.

JUDGE von KANN: -- on Page 23?

THE WITNESS: Yes.

JUDGE von KANN: And then, subsequently, you tried this one that's reflected in JSC 14-X.

THE WITNESS: It's probably a misleading

to say I did one then the other. We wrote a program in STATA. And we thought doing the greater than zero first made sense, but essentially they were run within milliseconds of each other because the STATA program -- well, maybe not because it actually has to do some manipulations to the data. First it does the whole dataset, then it cuts out some of the data and then reruns the regression.

JUDGE von KANN: They were done virtually one right after the other?

THE WITNESS: Yes. So I don't want to be misleading, but if you look at the actual log order, the one of zero was first, but we did them virtually at the same time, but I was -- the one that I wanted first was the zero, the one that I wanted to do more -- greater than zero, excuse me.

JUDGE von KANN: And what in a nutshell were the other two? You said there were two more that were described briefly in the appendix.

THE WITNESS: Right. There's also the fixed and random effects regressions, and those were run actually, I believe -- they're actually -- if you look, they were probably run even between the two on the log, because the dataset wasn't cut before that, so this was fixed and random effects regressions. I also did not do -- I could have taken these and done a similar thing to Exhibit 14-X for the shares on these as well. That would be possible to do with the values as well, but I didn't present those numbers either. I was looking more using both these and the other things to say, does this stuff makes sense in terms of a regression analysis, not looking at the shares stuff.

JUDGE von KANN: Why run one at DSE above zero, I guess, and then one? I mean why not at -- why DSE equivalents of one as opposed to two or one and a half or 0.5? Why did you pick one?

THE WITNESS: I picked one because everybody pays for one. If you go from 0.75 DSEs to one, you add a quarter -- your rate doesn't change. At one, everybody's rate changes when they add a distant signal equivalent and that's --

JUDGE YOUNG: Even if it's a 0.25.

THE WITNESS: Even if it's a 0.25.

Whatever additional distant signal they add at one, so one or greater, that means that they're definitely changing their rate. Before that they're changing their royalty payments, and so I wanted to add that in as well. But that's why I picked one to see if there was a difference when the rate changed.

JUDGE GULIN: There was a rational reason.

THE WITNESS: I think so.

JUDGE GULIN: The only real reason that you did it was to see if there would be -- it wasn't because it was a rational way to approach the problem, so much as you just wanted to see if there was a difference between using one or using a positive number. I think that's what you said when I asked --

THE WITNESS: I said there are reasons you might suspect, but I think the reasons push more towards using all of the data.

JUDGE GULIN: Okay.

JUDGE von KANN: Okay. Mr. Dove?

BY MR. DOVE:

Q Dr. Rosston, if I could direct your attention now to Page 24 of your testimony, the second paragraph. In that paragraph, Dr. Rosston, you state that the estimate for the Commercial Television share that you calculated represents a lower bound, and in part the reason for that is that, quote -- and I'm looking now at the end of the -- or at the second sentence -- "There may be additional value in the station's work in putting together a separate and identifiable channel of programming that attracts subscribers, but that value is not reflected in the regression estimates for Commercial Television." Do you see that?

A Yes.

Q Could you please explain this additional value that you're talking about, this additional value in the station's work in putting together a separate and identifiable channel? What do you mean by that?

A The fact that they gather these programs, have things that flow together well that makes sense for a channel -- create an identifiable channel that people identify with or that can cause somebody to -- an example is outside would be that you know when you turn to ESPN there's sports, and when you turn to Nick at Night there is syndicated programming on that kind of thing, that you have specific channels that have sort of a theme to them, and this is a packaging function that they pay people to do.

Q Now, are you familiar with the programming on public television stations, generally?

A Yes, I do watch public television as well.

Q Not just sports.

A No. I wouldn't need to subscribe to cable to get public television because I could get it over the air, so I do value public television as well. I have young kids.

Q Are you aware that public television stations generally combine a wide variety of programming on their channel, children's programming, documentaries, how-to programming, arts programming, news programming, science, history programming. Are you aware that public television stations generally do that?

A Yes, I am.

Q And would you agree that as with the case with commercial television, there could very well be additional value in the work of public television stations and putting together separate and identifiable channels of programming that attract and retain subscribers?

A I haven't thought this through, but there's -- I would definitely agree with you that there is value in doing it. Now, the question is whether or not it's reflected in my regression analysis, because the Commercial TV stuff is not a single separate identifiable channel that I measure, but the Public Television stuff is a separate channel. So I'd have to think about -- I think it might be reflected in there. I know there is value in it, but I'm not sure whether it's separate or not from that.

Q So you agree there would be this additional value, you're just not sure one way or the other whether it would already be in your regression analysis.

A Yes. I would say there's value. I don't know whether it's additional value, because I may already reflect in my regression analysis. I think I probably do but I'd have to think about that a little bit more. I hadn't thought about that before this moment?

MR. DOVE: I have no further questions.

JUDGE von KANN: Okay. Let's see. Are we up to Music or Canadians?

PARTICIPANT: Doesn't matter to me.

JUDGE von KANN: Mr. Satterfield.

MR. SATTERFIELD: Your Honor, would it be appropriate to take a short break?

JUDGE von KANN: Yes. I think it's been a while. Okay. How about if we take 15 minutes?

(Whereupon, the foregoing matter went off the record at 5:05 p.m. and went back on the record at 5:21 p.m.)

JUDGE von KANN: Okay. Mr. Satterfield.

MR. SATTERFIELD: Hello, doctor. My name is Kendall Satterfield. I represent the Canadian claimants. This is where I come up and give you a chance to explain why the Canadian claimants don't actually get zero in this proceeding.

CROSS EXAMINATION

BY MR. SATTERFIELD:

Q You're aware that when Canadian programming is retransmitted, it's retransmitted on a Canadian signal. Correct, sir?

A Yes.

Q And that generally speaking, the bulk of the programming on this Canadian signals is Canadian programming.

A I don't know the factions of it. My understanding was that what Mr. Fratrik did was to divide out a percentage that went to a couple of other categories on the Canadian signals, but I don't recall the --

Q So that when you studied the cable systems, the -- let's say, for instance, you studied a system where there was only a distant Canadian signal, and there's a fair number in your study that are that way, Mr. Fratrik would have divided out the programming so that there would be a Canadian category of programming, Joint Sports category of programming, and a Program Suppliers category of programming.

A Correct. This is different than what I just finished up saying on the Public Television, where it's all on a signal channel. The Canadian has a channel, like other channels, has multiple types of programs on it, but the majority is Canadian.

Q And I've looked -- I mean, your observations on Table 2, I believe, Table 2, it's based on observations of 7,529 systems.

A Yes.

Q And do you know how many observations in the study are represented, that represent the character of Canadian programming?

A I don't know that number. I know the -- no, I don't know the number of systems that have that.

Q For purposes of this discussion, can you assume it's about 250 observations?

A Sure.

Q And I'll represent to you it's about 250, which would mean if you divided those by four, since it would be 250 over four years, you would have 62 systems or 63 systems a year.

A In an accounting period.

Q Per accounting period. That would have been included in the study, and I think your study covered --

A 2,500.

Q -- 2,500 systems.

A Right.

Q Okay. Don't worry. We're not going to do a lot of math here.

A You took the calculator away.

Q So then while we're looking at Table 2, if we go down to the co-efficient for the Canadian programming, you get a number that's not statistically significant from zero.

A Not statistically significantly different from zero.

Q Different from zero. Sorry.

A Yes.

Q And then you get a standard error -- well, that number is a negative .055, and then you get a standard error of .06. Now the standard error is greater than -- is 100 percent -- the ratio of the standard error to the co-efficient is greater than one.

A Correct.

Q Now is that the result of the small sample size?

A Probably the result of the small sample that you measure it with less precision. You have a lot of observations of systems with Program Suppliers' programming, and they have a very relatively small standard error compared -- even though it's relative to the size of the co-efficient, so this is probably the result of the fact that you have a small number of observations.

Q And then you did another regression that -- so this one was one for any positive DSEs, so that means if they carry one public television or one network affiliate on the system, so they were less than -- those systems were also included in this study. That's correct?

A All systems that had any distant --

Q Any distant carriage --

A Yes.

Q So in Table 2, there are 7,529 observations.

A Yes.

Q And if we go over to -- let's see, what's the next one? Appendix C.

A Appendix C, yes.

Q And this is where you rated for DSEs greater than one.

A Yes.

Q And here the number of observations are down to 6,711.

A 6,771.

Q I'm sorry. My eyes are getting tired. And the difference here is the fact that the excluded systems were the systems that would have probably had -- well, certainly would have had either -- the only distant signal would have been a partially distant signal.

A No, that's not correct. Partially distant would be considered at their full DSE, either .25 or 1, so the ones that are excluded are systems that had 1, 2 or 3 of .25 DSEs, so the network stations or PBS.

Q Right. And for this study, again the co-efficient for the Canadian system programming is negative, and is not statistically significant.

A Right. The co-efficients are nearly identical to the one before.

Q And again, the standard error is -- on a relative basis is greater than the actual co-efficient.

A Yes.

Q And then finally you did the last two regressions, and these were based on the first set of systems with any distant signal equivalent greater than zero.

A Correct. This is the Appendix E that you're referring to?

Q Right.

A Of the random and fixed effect progressions.

Q And in this one, for the first time, we get a positive co- efficient for the Canadians, but again, it's not statistically significant, and again we get a -- the random effects, again the standard error is greater than .08, greater than the actual co-efficient.

A Yes.

Q And then the same result for the final fixed effects progression.

A Yes.

Q Now you -- in designing the study, if I understand you correctly, you said that the way you would determine if the study worked is whether or not - I hate to paraphrase it - whether or not the results sort of met your expectations. Is that correct?

A Yes.

Q Now did you have the expectations that the Canadian co- efficient would come out at zero?

A This is once again because of the small sample, you get an imprecise measure of it, so it could be at zero. It could be slightly positive. It could be slightly negative. That's what the bounds on the standard error on that one were. This is the best estimate, but it could well be a zero or positive number, as well as negative.

Q So the fact that every year cable operators in the country carry Canadian signals for which they attain primarily Canadian programming, and pay several million dollars a year in royalties, they're acting rationally or irrationally?

A I think that you expect that they figure that somehow this is affecting the numbers of subscribers they get, and increasing, so that's why they're choosing to carry the Canadian signals.

Q So the fact that they're carrying those signals and paying the royalties is information that the CARP should take into consideration in looking at that study with respect to the Canadians?

A Well, I think that once again it's a question of what -- I'd have to think more about this in terms of what the Canadian station makeup is. If it's a similar problem to the Devotional, I don't think it's quite the same because the Devotional is a relatively small part of the program, and you get that with the other stuff. In this, you're probably more likely buying a channel because of the Canadian programming, but it may be because of the Sports programming that's on it, as well. So different things can lead to the fact of why you're buying this. It could be that there would be sports or other things, or syndicated programming that you get on those Canadian stations that you might not get on other stations. So I have to think about that a little bit more to figure out exactly what's going on with the Canadian.

Q But now to answer that question, would it be possible, or wouldn't it be appropriate to ask the cable operators how they assign relative values to the different types of programming on the Canadian signals, the Canadian programming versus the Sports programming, versus the Syndicated programming?

A That would be, I think, a different way of approaching the problem than I did it, sort of surveying them and asking them what they value things at. But what I did was I looked at what their actual purchases were, and how that affected royalties, and it turns out that when they purchased more Canadian content, the royalties paid went down. And it may be because they were buying other stuff with it or not, but once again, it's an imprecise -- as you pointed out correctly, it's imprecisely measured because there's a relatively small number. Trying to do something with the 60 observations or so per year, is relatively small.

Q So you would agree that this impreciseness to some degree causes there to be less ability to rely on the results from the Canadian, and maybe some of the other programming categories in the study.

A Well, I think that I would pick the point estimates of all of them as the best estimates. But on the other hand, you're right that these guys are buying Canadian, or picking up Canadian signals for a reason. And that may give you some more pause about the Canadian co-efficient being negative than you would have pause on the other co-efficients.

MR. SATTERFIELD: Well, it's 5:30. I'm going to go back to my seat. Thank you very much.

JUDGE von KANN: Thank you, Mr. Satterfield. Music.

MR. LOPEZ: Dr. Rosston, I was so looking forward to saying I have no questions at all, but --

THE WITNESS: So was I.

MR. SATTERFIELD: I'll be very, very brief. I'm Jeff Lopez on behalf of the Music Claimants. Good late afternoon to you.

CROSS EXAMINATION

BY MR. LOPEZ:

Q Just to clarify one thing that has kind of come up a couple of times during the various examinations today. With regard to music, you put music aside because you didn't have any data related to music. Is that right?

A That's correct.

Q And so your analysis in its entirety is only focused on the balance of the groups, after the panel awards whatever it's going to award the music. Is that right?

A That's right. I stated that in my report, and you're characterizing it accurately.

Q So to the extent anything is left after the panel gives music its share, you've laid out in Table 3 of your report the proposed allocations under your methodology. Is that right?

A Yes.

Q And as part of that proposed allocations, you identified for the Devotional Claimants a zero share. Is that correct?

A Yes.

Q Now are you aware that the Devotionals have settled their claim in this matter?

A Yes, I heard that.

Q And that they've received more than zero.

A I believe they -- that would not surprise me.

Q Or they'd still be here arguing with you about the fact that they're entitled to more than zero.

A Right.

Q To the extent that the panel has to recognize that the Devotionals got their settled share, you would agree with me that the re-allocation of the remainder would not come out of music's share, but would come out of the remainder of the pool.

A I think that's true. I haven't thought that through yet.

Q Well, when you --

A Give me a second to think about it. My model was with allocating shares, excluding Music and including Devotional. Presumably, if Devotional gets a share of this, then that gives everybody else a share of what's remaining of the -- I think that's right. That would be the logical conclusion.

Q And similarly, Mr. Satterfield was asking you about whether there may be some adjustments that are appropriate to the Canadian share based on some of the factors that you said might give you more pause with regard to the Canadian co-efficients, as opposed to some of the other ones. To the extent that the panel determines that any adjustments to your methodology or to your allocations are made to account for those co-efficients, that wouldn't affect the music share at all. Is that right?

A Right. My methodology excludes music, so if you're using my methodology, then you would exclude music.

MR. LOPEZ: That's all I have. Thank you very much.

JUDGE von KANN: Mr. Stewart. Some further cross?

MR. STEWART: I guess I'd forgotten the procedure --

JUDGE von KANN: Well, yeah. My own view is that if the party who offered the witness wishes to hold until the very end, you have that right. If you want to ask redirect on the basis of what you've got now I guess you can.

MR. STEWART: I'd be happy to have Mr. Winters go further.

JUDGE von KANN: Okay.

MR. WINTERS: I just have a couple of questions.

CROSS EXAMINATION

BY MR. WINTERS:

Q Do you have a copy of -- I guess you wouldn't - PTV Demo 2? Mr. Dove did his calculations of PTV's share of the total full based on your regression analysis, and that he did it again calculating it, taking out the 3.75 in SYNDEX royalties. Do you know for a fact if you calculated -- you did your regression analysis with regard to only signals that were carried on a Basic basis, rather than a 3.75 basis, that PTV's share would be 8.3 percent?

A No. I think it's -- my understanding of the way the shares work is that sometimes -- it would be difficult to redo this regression that way because what causes one station to be a 3.75 station in the CVC data may cause another not to be a 3.75 station, but if the first one weren't there, the second one would be a 3.75 station, so it's sort of arbitrary which one gets designated as a 3.75 station. That's why we tried to put everything together, rather than doing separate things because of allocation, and the same problem would occur, who's the first DSE versus the second DSE on systems, so that's why we didn't do it that way. And so I haven't done it, and so I don't know if you ran the regression it would come out that way. I'm not sure you could run it that way.

Q Okay. But if you could come up with a -- just say use the ones estimated by CDC as the 3.75 and took that signal out, and ran the regression, there would still be the same number of PTV signals in there. Correct?

A If you just took out the 3.75 stations, you'd have the same number of 3.75 -- I'm sorry. If you just took out the 3.75 signals, you would still have the same number of PTV stations. I believe so, yes.

Q Right. And can you tell me whether or not the 8.3 percent number is what you would get if you ran an analysis?

A I don't know, and I don't think because of this arbitrary distinction as to which station is 3.75 and which one isn't, you might be incorrectly measuring minutes, so I don't know the answer to that question.

Q Okay. I want you to assume that all you're trying to do is allocate the Basic fund. If you perform that regression analysis, are you sure that PTV's share would come out to be 8.3 percent?

A I think I just told you I'm not sure that that regression would give you answers that would be accurate for determining it. In fact, I think that because of this arbitrary distinction as to which channel on a system is the 3.75 channel, that this may be a better way of doing it, is not to do a separate regression for Basic royalties only, but to do it jointly under the arbitrary distinctions, and then allocating the shares between them that way.

JUDGE von KANN: Okay. Anything else?

REDIRECT EXAMINATION

BY MR. STEWART:

Q Dr. Rosston, do you recall discussing with Mr. Olaniran the possibility of including the DSE value as a variable in your regression analysis?

A Yes.

Q If -- let's talk about the left-hand side of your equation for a moment, the royalties. All right? What are the components of the royalties?

A The components of royalties are subscribers times the monthly cable rate, times the royalty rate.

Q So subscribers, times the dollars that --

A For Basic cable, I guess would be Basic, monthly cable service price.

Q Okay. That's what the subscriber pays.

A Yes.

Q And what was the third component?

A The royalty rate, distant signal royalty rate.

Q And that rate itself has two elements. Correct? The percentage of the .893 percent, and the number of DSE that the Form 3 system carries?

A Yes.

Q So if you included the number of DSEs that the system carried on the right-hand side of the equation, would that be appropriate, or would that cause problems?

A I think you'd have -- you would be -- it's not what you -- it would -- it's not a perfect linear relationship, because this DSE, the rate is not necessarily .893 times two when you have two DSEs, but it is highly co-linear on that. And putting that on the right-hand side wouldn't give you the measures that you're interested in. It might be very easy to explain things like in the regression of dollars per house on dollars per house.

Q Would that be an endogeneity problem, as well?

A I'm not sure it would be an endogeneity problem. It is more of a mis-specification problem.

Q You were asked during the Sports cross I think by one of the panel members about the fact that your regression co-efficients for the programming minutes categories don't explain all of the variation in royalties. Do you recall that?

A Right.

Q Now I want you to assume with me a simplified version of an analysis of cable distant signals. You've got only two systems in the entire marketplace - is that right - the entire cable marketplace. One of them is in Beverly Hills, and one of them is in South Central Los Angeles. Okay. Are you with me?

A Yeah.

Q Each of them carries the same two distant signals. Each of them has the same number of subscribers, but the Beverly Hills system pays much higher royalties than the South Central Los Angeles system. Do you think that's a fair presumption, or fair premise for this hypothetical?

A Probably not much higher, but they probably -- they may be able to charge higher -- they would pay a higher royalty because they charge more for the monthly cable service.

Q If, in fact, and just let me make that part of my hypothetical premise. The royalty fee charged by the Beverly Hills cable system is substantially higher, the subscriber fee, so that it does pay substantially more royalties than the South Central Los Angeles system. Okay?

A Okay.

Q Now if you just ran the regression as you did, you would expect to find some substantial part of the difference between the royalty effects attributable to something other than the programs that were carried by the two systems because they were the same programs. Is that correct?

A Right. You would expect that there was something else that's explaining it, like income in the area.

Q So that a -- not all difference in the royalty effect that you observed would be attributable to the program categories that are delivered by those systems on a distant signal base. Is that right?

A Exactly right.

Q Now do you think that it would be fair, nonetheless, to allocate all the royalties that those two cable systems paid among all of the owners of the programs on the distant signals in accordance with the co-efficients that your regression would result in?

A Yes. I mean, that's what we're trying to do, is allocate among the relative marketplace value the signals, not worrying about income or other effects in the local area.

Q Mr. Satterfield asked you about comparing the -- what cable operators would say about the value that they placed on Canadian programming with the result of the regression analysis that you present here. Do you recall that?

A Yes, I do.

Q Are you familiar with the Bortz survey?

A Yes, I've looked at the Bortz survey.

Q What -- you talked with Mr. Satterfield about the relationship between those two. How do you consider the -- what do you consider to be the relationship between the Bortz survey and your progression analysis results?

A The Bortz survey is a very different way of approaching this problem, in that they ask cable operators to allocate a fixed amount of money among different program categories, and ask them how they would spend their money on that. What I find is, to me it's a very different way of approaching the problem, and the results come in relatively close for most categories to what the results that I got were.

Q Are the shares the same rank order as the shares in your results?

A For the most -- at least for the top three, but I don't remember exactly the differences, and I don't have it in front of me.

Q Do you think that the different or the similarities between the Bortz results and the -- your regression results are remarkable?

A I was sort of -- I thought it was sort of very good the two different methods, two very completely different methods came up with similar results. And one of the things that I thought was interesting was that because of these other factors that I claimed that the sheriff or the local broadcasters - I'm sorry - the Commercial Television Claimants was a lower bound, and found that the Bortz survey actually gave a slightly higher share in the Bortz survey to Commercial Television. But these were very close for methodologies that come out from completely different ways to come to things that are relatively close.

Q I'd like to go to the board here, white board and discuss the -- what's been marked JSC Demo 3, and I'm handing you the corrected and uncorrected pages - I'm sorry - the original and corrected pages first of the --

A You're not making me page through my binder?

Q No, sorry. I know you enjoy that. Of the page 13 from NAB Exhibit 10, and page 23 from your study. And would you read to me -- Mr. Winters didn't provide the numbers for all of the categories when he did this analysis, but would you read to me what the Public Television number is?

A So the Public Television in the Fratrik study, the first one was 13.93 percent.

Q All right.

A And the corrected version was 14.87 percent.

Q Okay. So that share of the time went up. Is that correct?

A Yes.

Q All right. And would you read to me now your original and corrected regression shares from page 23, Table 3.

A Okay. Public Television's original was 7.42 percent.

Q All right.

A And the corrected one is 7.54 percent.

Q So that -- their regression share went up.

A Correct.

Q Now the Fratrik study percentage numbers were the minutes weighted by subscribers, and then expressed as a percentage of the entire weighted number of minutes in the cable universe. Is that right?

A I believe so.

Q Did you use minutes weighted by subscriber in your study?

A No.

Q Did you use the overall time percentage, either weighted or unweighted, in your study?

A No, I didn't.

Q What did you use?

A I used the minutes carried on a system, minutes in each programming category carried on a system by distant signals in each time period.

Q On a station by station basis?

A On some of the stations.

Q Okay. Now Mr. Winters' original version of this JSC Demo 3 appeared to demonstrate an invoice correlation between the amount of -- the share of program time and the regression share in your study. Do you see that?

A I see -- I mean, I was sort of curious. He had -- the arrows went opposite directions for the top three, but I wasn't sure what he was trying to get at with that.

Q Well, would you expect that kind of

invoice relationship between these two studies?

A Ultimately, you've got to expect a non-inverse relationship, but at any point in time you may have one going up, one going down. You could have different things doing different directions here. Ultimately, if you sort of take it to its logical extreme, for example, commercial television went from 12.21 to 13 percent and it's geo went down. But if you took this up to 100 percent, this share is going to be 100 percent, so you know that that's got to be -- that's got to go both the same direction at some point in time. So when they're negative, positive, whatever in the middle, doesn't tell you anything based on these results about what the ultimate relationship is. If you went another .8 percent up for commercial television, then the share may go up. It depends on the composition of what cable systems they're on, and what's going on, as opposed to just you can't make an assumption that because their share went up, you know, of minutes their share of the royalties goes down. That's just a completely invalid conclusion from this.

Q If the amount of programming minutes by category changed on a station like WGN, which was carried widely, what kind of difference do you think it would make? For example, if the commercial television -- number of minutes of commercial television on WGN went up, and the sports minutes went down, how do you think that would affect the regression shares?

A What it would do, it would change the regression. It's -- the answer is it may go either way, but it probably -- and, in fact, we just tried to do some analysis where we changed 60 minutes of programming on WGN from sports -- from syndicated to sports and commercial TV, and the results were very stable. They didn't change a whole lot if you changed an hour of programming on WGN. But depending upon which station you changed them on, or which way you changed them, from what category to what category can affect the results, and there's no way to make any specific prediction that if the share goes down of minutes, the share of royalties should go up or down.

Q Did you test specifically whether if you took minutes out of program suppliers and sports and added them to commercial television on WGN, how that affected the regression results for commercial television?

A Yes, I did.

Q And what was the effect?

A When we took those minutes out and added them to commercial television - let me just make sure I've got the right numbers on what it was - it was -- well, that's why, 10.9 and it went to 11.1, so by taking minutes on WGN out of sports and program suppliers and putting them into commercial TV, the commercial TV share went up, and this share went up.

Q All right.

A So just doing that arbitrary test showed another example of it going that way.

Q All right. Now you said in response to -- you talked with Judge Gulin a bit about if you envision a free market as buying a whole signal as opposed to buying individual programs; that is, the cable operator buys a signal worth of programs instead of individual programs, whether your analysis would be more or less applicable. Do you recall that?

A Yes.

Q And you suggested that the individual program seller perspective is already reflected in your regression analysis to some degree?

A Yes.

Q Why is that?

A Because program sellers are selling into this marketplace. They are not being fooled by the fact that someone is a local signal, and then turns around the next day and says oh, I'm selling you as your distant signal. They actually know what's going to happen as a distant signal, so their willingness to supply the program to a local signal is subject to the fact that they know there's a possibility or probability that that channel is going to be carried as a distant signal somewhere else, so the supply side of the equation is in. And, in fact, the program suppliers have this choice of selling to local channels, or of selling to cable networks. And they know on the local channels, there's a chance that they could be a distant signal. And, in fact, I think --

it's my understanding that it's possible for -- and that some people have argued that they should be able to prevent the transmission of their signal as a distant signal. A program supplier, a copyright owner could prevent the transmission of a signal as a distant signal. They can enter into a contract if this is really important to them, so these supply side considerations, all these suppliers do have options in this marketplace, and they're acting in the marketplace of their own free will to do that.

MR. STEWART: Mr. Chairman, might I have just a moment? Thank you.

JUDGE von KANN: Mr. Stewart, there are one or two questions from the panel. I don't know whether you'd like to, while you're doing that have us get them out of the way, or you'd rather complete before you do.

MR. STEWART: No.

JUDGE von KANN: I don't care much --

MR. STEWART: No. I have got a little bit more review here to do, but I --

JUDGE von KANN: Why don't we maximize our time here. Judge Young.

JUDGE YOUNG: You know, you had said something earlier about acknowledging that there's two different views in the marketplace, two different views of who's selling, whether it's the copyright holders or the broadcasters. Do you remember that earlier testimony?

THE WITNESS: Sorry. Whether -- oh, in this hypothetical market without it, whether you'd have people buying on a program by program basis, or on a channel basis.

JUDGE YOUNG: Right.

THE WITNESS: Okay.

JUDGE YOUNG: You acknowledged that the buyers, the purchasers are the cable system operators.

THE WITNESS: Yes.

JUDGE YOUNG: I guess the question is whether --

THE WITNESS: Who they buy from.

JUDGE YOUNG: Who they're buying from. Do you have a view on that?

THE WITNESS: My guess would be that this is something that they would buy on a channel basis. The cable operators don't tend to buy things on a program by program basis, and program their own channels up, that they don't do that now where they could. They buy networks, even if it's the Golf Network or whatever the -- I'm not sure, I shouldn't pick on anything, the Food Network or other things. They are relatively --

JUDGE von KANN: The Puppy Network is our example here.

THE WITNESS: Okay. Relatively lightly viewed cable system, cable network. They still buy it as a network, and they buy things as a network that is programmed by somebody else.

JUDGE YOUNG: So they would be buying from the broadcasters.

THE WITNESS: They would be buying from a broadcaster a package system probably, most likely, yes. That would be my view of how they would do it.

JUDGE YOUNG: And one of the concerns we've had, or one of the issues that has been raised about that analysis is that with the experience of re-transmission payments, broadcasters don't tend to push too hard for cash payments for re-trans authority or consent. Does that affect your thinking in any way?

THE WITNESS: I don't think that affects my thinking. I can't see how that would affect what I'm thinking about now that they - - that the broadcasters would know that they were in a different world, and they're in a competitive world of program supply and program demand, as well, currently and they would still be in a competitive world, in a hypothetical world, so I don't think that affects my analysis.

JUDGE YOUNG: Thank you.

BY MR. STEWART:

Q Dr. Rosston, do you have JSC Exhibit 14-X?

A Yes.

Q Now in that exhibit, Mr. Winters took information that you had presented in your testimony and calculated a different set of implied royalty shares. Do you see that?

A Yes.

Q And just to walk through this, first of all, where in your testimony was the value of additional minutes or co-efficient for this partial group of cable systems reported?

A It was reported in Appendix C, I believe.

Q Okay. So this first column of numbers, .151 is from Appendix C, starting with .151 for program suppliers?

A Yes.

Q Okay. And where is the -- where are the numbers of minutes associated with the programming category presented?

A Appendix D.

Q Okay. And that's different from the number of minutes that you used for your principal regression for what reason?

A Because there are a few - I hope this is true - there are fewer minutes than -- because there are fewer systems.

Q Because some of the systems that you considered were eliminated.

A Right. So it goes down from 334.8 million to 296 million.

Q Where do you get the --

A Table 3.

Q Yeah. Look at the corrected version.

A Oh, sorry about that. 318 million down to 296.

Q So the 318 million is the number of minutes for the full 7,500 and some systems that you analyzed for your regression.

A Yes.

Q And this number of minutes in Appendix D is for some subset of those systems. Correct?

A Yes.

Q All right. Now then moving to the next column on JSC Exhibit 14-X, what's your understanding of how the next column is calculated?

A It's the product of the first two columns.

Q Okay. You just multiply them together?

A Yes.

Q And how do you calculate the next column, the implied share of royalties?

A I should clarify that the zeros are

clearly not the product of the other two.

Q Correct. So those are just plugged in as zeros?

A Yes. The next column would be dividing Column D by the sum of Column D. So 26.9 million divided by 57 million.

Q Okay. And then how do you calculate the percentages in Column F?

A Column F would just be the 26 million divided by the sum of the first numbers in Column D, 56.9 million.

Q Now you -- what is your reason for believing that your principal regression is a better measure than the one that's presented in Exhibit 14-X?

A This is the reasons for it, that we have information from the signals, from the systems that carry between zero and 1 DSE because they have choices, in effect, their royalties. The second is that most of the distant signals are a 1.0 distant signal equivalent, and that we have more information that we can use.

Q And let's look at the second one. So if a cable system is currently carrying .25 DSE, then how does the fact that most signals are 1 DSE affect whether you should include or exclude that system?

A Well, it's paying not only -- when it -- there's two possibilities for this. It could either add a .25 DSE or a 1.0 DSE as the next signal to that. And if it adds a .25 DSE, it faces a positive price because it could -- it faces a positive increase in its royalties because it could increase subscribers or increased royalty rates. When it adds a 1.0 DSE, it does those first two things, and it also increases the rate it pays, as well, because the rates change at 1.

Q And its decision not to add that is relevant to your -- not to do so is relevant to your analysis?

A Yes. That's sort of the price it pays at the margin, or the implicit price it's paying.

Q Now would you turn to Appendix E of your testimony, please. In Appendix E in the right-hand column you report co-efficients for the fixed effects analysis that you ran. Is that correct?

A Yes.

Q And the fixed effects analysis, in effect, using more data in running the analysis than was used in the ordinary leased squares analysis. Is that right?

A It doesn't use more data. It uses more information about the data we have.

Q All right. And one could do the same analysis that is presented in Joint Sports Exhibit 14-X with respect to the co- efficients in that fixed effects column, could they not?

A Absolutely.

Q And you could do so by taking the minutes, the total minutes from your Table 3 which includes all 7,529 systems, the co- efficients from Appendix E, and doing the same calculations as were done on Exhibit 14-X. Correct?

A Yes. This would be easier because all you would have to do is take the co-efficients from Appendix E and plug them into where the co-efficients are on Table 3. Then you would multiply them, then the number of minutes stays the same, and you would multiply through.

Q And has that analysis been run, to your knowledge?

A I believe so, yes.

Q Now I'm going to hand you this laptop. I do not have a printout, I'm sorry to say, but this is a spreadsheet in which those calculations were done. And I'd ask you first to confirm that the number, the co-efficients in the Column B on this spreadsheet match the ones from Appendix E, the fixed effects of regression. You're checking the program minutes first.

A Yes, because they're right there.

Q Program minutes from Table 3 of your testimony.

A Yes. There is a slight error, which actually doesn't matter, but I'm going to correct it. Devotional has an extra zero in it.

Q All right.

A Okay. So I've checked the minutes. Now what did you want me also to check?

Q To check that the co-efficients in Column B of that spreadsheet --

A Are from Appendix --

Q -- are from Appendix E, the corrected version of Appendix E.

A From the fixed effects column.

Q Yes.

A And thank you for saying corrected version. Yes, I checked both Columns B and C, and they do reflect -- Column B reflects the co-efficients from Appendix E, and Column C reflects the minutes from Table 3.

Q All right. And could you check the formulas that are entered in the cells in Columns D, E and F, to see whether they match the mathematical computations that are presented in Exhibit 14-X?

A Yes, they do.

Q Okay. Would you please read into the record the implied share of royalties excluding Mexican and low power for the programming categories, starting with Program Suppliers?

A Can I check Columns E and F before --

Q Yes.

A -- before I do that?

Q I'm sorry. I thought you had.

A No. Okay. I've checked that, and I believe them to be accurate. The implied share of royalties excluding Mexican and low power, the Program Suppliers would be at 38.23 percent, Sports would be 26.89 percent, Commercial Television 28.49 percent, Public Broadcasting 4.64 percent, Devotional zero, Canadian 1.74 percent.

Q Now turning back to Exhibit 14-X, Dr. Rosston, did you decide not to present these shares because the Commercial Television share was lower in this version than it was in the version that you presented in your testimony?

A No. The same, as you can see from the numbers I just read, that the shares go up for Commercial Television, and another one that I decided not to present, as well.

MR. STEWART: Thank you. I have no further questions on redirect.

JUDGE YOUNG: I would assume, you know, using your standard of how this measures up against a priori expectations, the exercise Mr. Stewart had you go through, really doesn't match your a priori expectations.

THE WITNESS: I'm not sure I understand.

JUDGE YOUNG: The results of the exercise Mr. Stewart had you go through with respect to Appendix E, that would not match the a priori expectations you articulated earlier as to why Table 3 made sense.

THE WITNESS: Well, I think sometimes -- it does. If you look at the co-efficients in Appendix E, that's where I would look at the fixed effects regression, look at the co-efficients. And again, you look at the co-efficient on Sports Programming, and it's a $1.10. It's still relatively high compared to the others. The Commercial TV becomes more valuable in the fixed effects regression, and so these things -- the magnitudes, and the numbers, and the levels are all still similar, and they have the similar feel that you would have from the other.

What happens in a fixed effects regression is you control for factors that vary by cable system, and so what I -- it was sort of -- what you might expect a priori from this is someone may - - some people in this room are probably fairly influenced by the past royalty awards; whereas, a priori, if you sort of went through this as an independent analyst, you might think this doesn't seem unreasonable at all, a priori, without any expectations of what awards had been done in the past.

JUDGE YOUNG: If you just compare the CTV with the Sports, how could it be that the expectations -- I mean, you have the result that looking at the co-efficients on Appendix E, where it's a divvy of 3, 3 plus times value for Sports, as opposed to Appendix -- Table 3.

THE WITNESS: Right.

JUDGE YOUNG: Table 2, actually.

THE WITNESS: Where it was 10 times.

JUDGE YOUNG: Ten times, and that's a fairly significant discrepancy.

THE WITNESS: It is a significant discrepancy. I believe that looking at some of the other figures, that Sports may be 10 times as valuable, may be 3 times as valuable. There's data that you can look at for what -- I think the Sports people put in something that showed royalty payments per subscriber for ESPN compared to other things. The ratio was a factor of 5, somewhere in-between the two. So these don't seem to be outrageously off, either one. They're different numbers and different approaches to the problem, and different econometric approaches, but this one, in some sense if you were going to publish in an economics journal, or going to do it, you would present the fixed effects regression as your sort of analysis that you would believe in as an econometrician. You would say well, I'm making more use of the data. To me, there are trade-offs, there are some trade-offs with the fixed effects model, and that's why I didn't want to do it, was because of the trade-offs that you have. And I thought that the straightforward ordinary leased squares regression gave you a straightforward analysis, and also didn't have these trade- offs where you were controlling for fixed effects. You didn't know exactly what they were.

JUDGE von KANN: Yes, Mr. Winters,

briefly.

MR. WINTERS: I will try to be as brief as possible.

RECROSS EXAMINATION

BY MR. WINTERS:

Q Going back to JSC Demo 13 on the board, now only talking about weighted minutes, does a relative change in the weighted minutes going down have an effect on whether or not the relative market value goes up?

A Does a change in the weighted minutes --

Q The weighted minutes in the Fratrik study.

A Right.

Q Do that have an effect on the --

A It has an effect. It's not predictable whether it's positive or negative. It does have an effect.

Q You can't tell from the Fratrik study whether or not the relative market value in your own study would go up or down.

A For different parts, exactly right. You can't tell from the Fratrik study. The only thing you could tell is that in the end if you go -- keeping going up forever, it's going to get there. It's going to cause the value to go up.

Q Okay. If you wanted to study a change in relative market value between say 1992 and 1998/99, might you do a regression analysis for 1992 and present it?

A That might be possible, yes, to understand that. You need to understand the factors that were in effect in 1992 to make sure that the model you set up was reasonable and comparable and everything else that was going on. I haven't thought about doing one for 1992.

Q Let me ask you this. You talked with Mr. Stewart about performing something of an alternative analysis where you took some minutes of Sports and Program Supplier's minutes from WGN and moved it over to Commercial Television. Is that correct?

A Yes.

Q Okay. When did you perform that analysis?

A I believe it was done yesterday.

Q Okay. If you could go to Table 2 on page

19, do you have that handy? And also have Appendix E handy.

JUDGE von KANN: What page?

MR. WINTERS: Page 19 of Dr. Rosston's testimony, and also Appendix E for comparative purposes.

BY MR. WINTERS:

Q In Table 2, the minutes of Public Broadcasting Program, do you see that?

A Yes.

Q The co-efficient?

A .067.

Q Right. And that's statistically significant?

A Yes.

Q Could you flip back to Appendix E?

A Yes.

Q The minutes of Public Broadcasting programming in the fixed effects regression analysis, is that statistically significant?

A No, it's not.

Q Okay. Going back to Table 2, the minutes of low power programming, is that statistically significant in Table 2?

A Yes.

Q Is it statistically significant in the fixed effects regression in Appendix E?

A No, it's not.

Q On Table 2, the minutes of Mexican programming, is the co- efficient associated with the minutes of Mexican programming statistically significant in Table 2?

A Yes.

Q Is it statistically significant in Appendix E for the fixed effects regression?

A No, it's not.

Q Okay. The number of activated channels, previous accounting period in Table 2, is that co-efficient statistically significant for the basic regression results?

A No.

Q I'm sorry. Is there a little star by the co-efficient?

A Number of activated channels?

Q Yes.

A Not on my version.

Q Okay. Oh, I'm sorry. The original version, there's a little star on that.

MR. WINTERS: That was the only -- that's the last question I had.

JUDGE von KANN: Dr. Rosston, I have a couple of very quick ones. I'm trying to understand your regression analysis, and I'm not there yet. It's going to take some time, and some work, and so on.

THE WITNESS: We have plenty of time tonight.

JUDGE von KANN: Well, not tonight, but over the next several weeks and months, I'll be working on it. Now there's one thing about it though that I must say I'm having some difficulty with, and I guess it could be summed up this way. Peter Stein said, "A rose, is a rose, is a rose." Rosston says, "A minute, is a minute, is a minute." Your analysis, it seems to make no difference whether we've got a minute that 25 million people are watching, or a minute that nobody's watching. And that, I think you've explained, is because you think viewing is not the significant factor, subscription is. Is that right?

THE WITNESS: That's right, but implicitly, the ones that -- if you think that viewing is directly related to subscribing, then people will -- then the ones that people view more will be more highly weighted, will be more highly valued by cable operators, and therefore, that number will come up. I believe that's why the Sports number comes out to substantially higher than the other numbers, because those are more valuable to cable operators in attracting subscribers. And implicitly, you might think in attracting viewers.

JUDGE von KANN: The other part of it that strikes me as a little counter-intuitive, is that it doesn't seem to matter to you whether the minute is on at 9 p.m. at night, or Sunday afternoon, or 4 in the morning. Again, that seems counter- intuitive to me. I would have thought that prime time minutes were more valuable than 4 in the morning minutes.

And now it may be that it doesn't really matter. For example, it seems to me that you probably have more Sports minutes on at prime time, and you probably have more syndicated reruns on at ungodly hours, you know. And, therefore, the Sports folks may get the benefit, that a lot more of their time is at prime time, and maybe the program suppliers get the deficit of having -- but maybe that doesn't matter, because maybe the theory is that cable operators think Sports are more valuable. They'll stick in it as prime time. And if they think, you know, the value of the Sports show outweighs "I Love Lucy", that's why they're on prime time, so maybe it's sort of a surrogate or a proxy for value. But can you help me understand a little why you did not put any -- did not take any account of the time of day in which the minutes appear?

THE WITNESS: The regression model implicitly does this in terms of -- both your questions go back to do people watch them? The first question was, how many people watch? And the second question was, is it in prime time, which I think you implicitly mean do people watch it?

JUDGE von KANN: Right.

THE WITNESS: Right? And both of those are incorporated into the regression model, because the cable operator is paying more for the signal that has more attractive program. And I don't want to say it is because it's more people viewing, more attractive to subscribers when it shows that sort of stuff. It may be the case that a cable channel is very valuable because it has a great 10 o'clock news show, and nobody watches it in prime time, and everybody -- it's very valuable to cable subscribers because twice a year there are hurricanes, and people want to watch, and this is the best hurricane watch system. It may not be --

(Whereupon, the proceeding in the above-entitled matter went off the record at 6:23:26 p.m.)

CERTIFICATE

This is to certify that the foregoing transcript in the matter of: Hearing: Distribution of the 1998 and 1999 Cable Royalty Funds

Before: Library of Congress Copyright Arbitration Royalty Panel

Date: May 9, 2003

Place: Washington, DC

represents the full and complete proceedings of the aforementioned matter, as reported and reduced to typewriting.